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Original Articles

GOITER.

WITH PRELIMINARY REPORT OF THREE HUNDRED OPERATIONS ON THE THYROID.

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The general impression to be obtained from a review of the surgical literature of America would be that diseases of the thyroid gland are greatly on the increase. This is probably not the case, but the public has learned that operations on goiter are not as fatal as were supposed from the results obtained when operations were made as a last resort on patients suffering from this disease and in a moribund state. The fact is that the mortality attending the operation (excluding cancer and advanced cases of exophthlamic goiter) compares very favorably with other major surgery; and, in the hands of those experienced, with much of the so-called minor surgery.

SURGERY OF THE THYROID.

The surgery of the neck never seemed to enjoy the popularity of that of the abdomen, and goiter operations are not even to-day sought by the majority of surgeons. Those who were competent did not sufficiently often encourage operative relief until the absolute necessity rendered the mortality so high as to be almost prohibitive. The lay impression became such that operative measures were permitted only in the most advanced cases, while semi-surgical, medical, mechanical and electric treatment flourished. In most cases death came slowly and was looked on as a relief from suffering, a result which satisfied everybody; but the death which follows operation is a shock to all, and in but few instances is there a consideration of the fact that medical treatment has previously failed. Neither is the urgent necessity of the operation nor the desperate condition of the patient taken into account, but the death is made a debit against the surgical side. Especially is this true in cases of exophthalmic goiter.

Surgery of the thyroid is one of the most satisfactory operations made, giving immediate relief with brief disability. The best known surgeon of to-day is Kocher, and wherever his name is mentioned the first thought connects it with the removal of goiter. It is through his monumental work in this line that his reputation traveled far and wide. Among ordinary goiters, in 70 operative cases before 1850, Kocher placed the mortality at 40 per cent. In 400 operations between 1850 and 1883, it fell to 15 per cent., and since 1883 has dropped to less than 3 per cent., Kocher's own being 0.4 per cent in simple cases. In Riverdin's report of the cases of death in 93 cases, respiratory conditions, suffocation and pneumonia caused 43 deaths, hemorrhage 19, infection 13, shock and nerve injury 9, cardiac failure 6, while only 4 were from tetany and myxedema.

DISEASES OF THE THYROID.

The diseases of the thyroid gland can be classed in a few groups—functional derangements, inflammations, hypertrophies and tumors. Each of these groups presents material for most exhaustive study, and very much has been written concerning them in monographs and books on the ductless glands and various types of hypertrophies and tumors. The present paper, being on the general subject of goiter, will discuss but briefly much of interest in relation to operative work.

In Europe there are certain localities which present such large numbers of people with goiter that the disease

Fig. 1.—Large cystic goiter measuring 31 inches in circumference, including neck.

is considered endemic, and, while it is said to be due to the use of waters from the mountainous districts, the disease is also endemic in some of the flat countries, as in the Indian Punjab and plains of Lombardy. Hereditary influences may also play a part. In the United States there are no such marked localities. The disease occurs in all regions and climates, among rich and poor, food and water having apparently no definite relation to its cause. Some regions appear to have more than their due proportion from possessing more accurate medical observers. The same may be said of exophthalmic goiter, which is often attributed to shock, with about the same proof that birth marks follow maternal impressions.

THE THYROID GLAND.

Development.—The thyroid gland is developed from a median process of the pharyngeal hypoblast which bifurcates below and forms pyramidal lobes, i. e., the isthmus and part of each lateral lobe, the remainder being formed from lateral outgrowths from the pharynx. In most vertebrates they remain distinct, but unite in mammals, the various portions being fused in the human embryo at about the seventh week. In some cases the fusion is incomplete, and separate thyroid bodies are noticed laterally or below the normal location. In others one or more lobes may be missing. The foramen cecum in the tongue marks the point of inversion and the remains of a disappearing structure, the duct or tract of the gland. It is in these lines of inversion, like branchial cysts, that accessory thyroids are found, and in the upper tract especially are so often the cause of serious conditions, as when found in the tongue and also in the median line of the neck above the isthmus. The so-called pyramidal lobe is present in from 30 to 40 per cent. of all people.

Anatomy.—The thyroid body is somewhat like a horse shoe in shape and rests on the trachea, with one lobe on each side, connected below by the isthmus which crosses the upper tracheal rings. These lobes are about two inches long, being smaller at the upper pole. The right one is usually the larger, and the entire weight is from one to one and one-half ounces. The gland is invested by a thin fibrous capsule which divides posteriorly, a portion lining the posterior and inner surface, while a part passes to the opposite side behind the esophagus. This investment explains the production of pressure from tumor growths on both of these structures and the occasional appearance of tumors between them. Fibrous bands also unite the gland to the trachea, which cause the thyroid to move with it. Trabeculæ of connective tissue pass into the gland structure and subdivide into the framework for the alveoli and small vesiculæ and serve as a space for the lymph channels which extend throughout the gland, performing the function of the ducts of this organ, as has been pointed out by King, Horsley and Hürthle. They have shown that these channels contain the same colloid secretion as is found in the gland vesicles.

The blood supply of the thyroid, considering its size, is remarkable for its extent and also for the freedom of anastomosis. The superior thyroid artery from the external carotid supplies the upper pole on its inner side, dividing and entering the capsule. The inferior thyroid from the thyroid axis enters the capsule below at the hilus. The main veins are the superior, middle and inferior, although many others seem to develop in diseased organs. The nerve supply is from the sympathetic. In intimate relation with the right inferior thyroid artery is the recurrent laryngeal nerve, which lies in the space between the trachea and the esophagus, and is so often affected by pressure of tumors, by operation or scar tissue as to cause hoarseness. On the left side the recurrent is usually more deeply set and not in such close relation to the artery, as was pointed out by Sifton.

Parathyroids.—In each side of the neck behind or within the investing capsule of the gland are the parathyroids, two small gland-like bodies somewhat resembling in structure the suprarenals. Little is known concerning them, but they appear to be closely associated with the thyroid in function, and it is probable that when the whole of the thyroid body is removed and the operation is not followed by untoward consequences the patients have active parathyroids or accessory thyroids. It is claimed by Humphrey that a fatty degeneration of these bodies is found in exophthalmic goiter. I could not verify the statement. The experimental study of parathyroids would tend to show that they hold a most important position in the metabolism of the body. Their removal causes tetany and, as they are small, they may easily be removed on the back capsule of the extirpated gland. The removal of one or two in an operation for colloid goiter may not prove serious but in exophthalmic goiter it may prove most dangerous in adding to the shock. To some extent, we can see how enucleation of encapsulated goiters would seldom cause either tetany or myxedema, as a portion of the gland is left and the capsule protects the parathyroid as well as the laryngeal nerve.

Fig. 2.—Enucleation of cystic goiter; capsule opened.

Function and Secretion.—Much has been written on internal secretions and, while our knowledge has continuously grown, there is still very much to learn about the ductless glands. A consideration of the functions of the various structures of the body shows that they are controlled by accelerator and depressor nerves, the stimulating and inhibiting forces. Every muscle action to be effectively controlled is balanced by another which opposes it. In other words, there must be a constant equilibrium of forces. When we consider the effects of

the secretion of the suprarenal gland with that of the thyroid, it would seem that in several respects they oppose each other. Such a fact explains, to some extent, the condition of cretinism, in which from lack of a functionating thyroid there is an arrest of development. Through the unopposed action of the suprarenal bodies there is a capillary contraction with circulatory starvation which affects the cerebral cortex, as well as other tissues. The intermittent feeding of thyroid extract causes increased growth and general improvement in appearance, with considerable mental development. The mental development is only sufficient in most cases to convert a passive, helpless imbecile into an active, restless and destructive idiot.

HYPOTHYROIDISM.

The loss of the function of the gland seems to be cause for more serious consequences in the young than in those who have reached their complete development. Young adults who lose their entire thyroids will retrograde in intelligence, while the older individuals frequently develop myxedema, in which we have the myxedematous condition of the skin and subcutaneous tissues, dry skin, loss of glandular activity, loss of hair and mental dulness. Apparently these cases are often overlooked unless well developed. The thyroid increases in size commonly at puberty and in the latter months of pregnancy. Such enlargement usually subsides after a period. Oliphant Nicholson, of Edinburgh, speaks of the enlargement of the thyroid during pregnancy and of the fact as shown by Lange that those who do not have such enlargement have an increased tendency to albuminuria and eclampsia. Kocher reports 70 per cent. of cachexias in 34 cases of total excision. Garre reports 50 per cent. in 67 cases. Billroth had 52 cases develop tetany, with 9 deaths, and 11 developed cachexia. The London myxedema committee only found 24 per cent. in 224 cases of total excision. Considering the remarkable conditions which occur from a loss of the secretion of the thyroid, we are not surprised at the serious derangements from an oversecretion or an abnormal secretion.

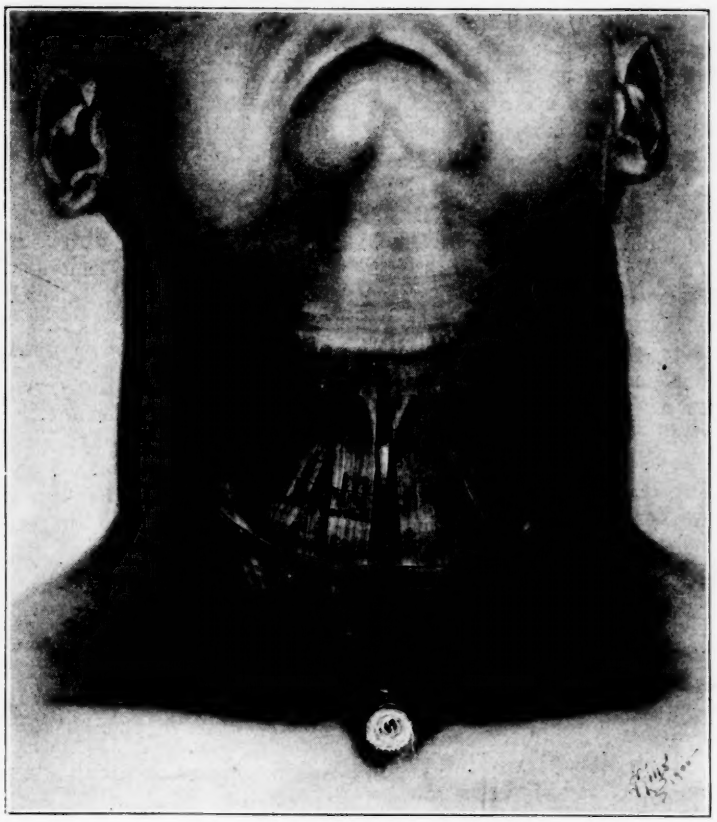

Fig. 3.—Muscle section higher than skin incision. Stab drainage.

EXOPHTHALMIC GOITER.

In 1835 Graves, and five years later Basedow more thoroughly, described the disease known by their names, or by the term exophthalmic goiter. These conditions may be described by various writers in a somewhat different way, yet they all undoubtedly mean the same condition which is characterized by an excess of the activity of the gland. A better and more expressive term is hyperthyroidism. It occurs much more frequently in women than in men and the greater number are between 20 and 40 years of age. It is not markedly hereditary and, while shock may be a contributing factor, it is difficult to elicit a probable cause in the majority of cases.

There are several symptoms in exophthalmic goiter which alone may occur in other conditions, yet, alone or associated, lead the diagnostician to consider the possibility of exopthalmic goiter. They are the enlargement of the thyroid, tachycardia, exopthalmos, muscular tremor and general nervousness. The gland is usually enlarged, but may not be palpable in exceptional cases.

With the exophthalmos may occur von Graefe's symptom, the lagging behind of the upper lid in looking down, or Stellwag's sign, the retraction of the upper lid. Möbius described an occasional insufficient accommodation without diplopia. Exophthalmos may be absent in 20 per cent. of the cases. The heart action may vary from 90 to 180 a minute, a case of medium severity being about 120 to 140. Systolic murmurs are not uncommon. Muscle tremor is easily elicited even in mild cases by having the hand extended, finger spread, palm down.

Associated symptoms are excessive perspiration, occasional rise of temperature and digestive disturbances, chief of which are vomiting and failure to assimilate. Attacks of such diarrhea are not unusual. The onset of the disease may be rapid, that is, during a few days, or it may be over an extended period of time before being noticed. Many medical men still consider the disease to be a probable intestinal toxemia and look on the goiter as a coincidence, although all of the symptoms may be produced in healthy individuals by feeding thyroid, and even exophthalmos is now recorded as occurring following the administration of dried thyroid for obesity. The gland in a typical case usually presents the true hypertrophy, a wonderful increase in cell activity and the cell areas in the vesicles are greatly increased in layers and by infolding. The cell form also changes in shape. The gland is dry and hard after removal as compared to the ordinary juicy colloid or adenomatous condition. The association of enlarged thymus in these cases is not definitely understood.

In our work at St. Mary's Hospital, we have operated

on exophthalmic goiters which were hardly palpable and have been surprised at the increased size of the gland over the normal when exposed. After all it is a question of increased secretion, absorption and delivery by the lymphatics, not necessarily the retention and development of a tumor. If the exophthalmic gland was no larger than normal it would be many times more active. It is a question if the failure of lymph absorbents in certain areas may not, following hemorrhage or increased secretion, play a part in the production of some types of cysts. Exophthalmic goiter may occasionally develop in a case of goiter of long standing, and then there are diffuse areas of hypertrophy in the general tumor. The best classification of the exophthalmic type is: 1, vascular; 2, hypertrophic; 3, hyperthyroidism developing on previously existing goiter.

A fibroid condition of the gland may follow recovery from exophthalmic goiter, and the consequent loss of function later may cause myxedema. Ord and Mackenzie tabulated 56 medical cases of exophthalmic goiter which had lasted five years or been fatal. There were 10 recoveries, 11 made incomplete recovery, in 13 there was considerable improvement, 4 were unchanged, and 14 (25 per cent.) were fatal. Others make more favorable reports.

With the general hygienic and therapeutic treatment of exophthalmic goiter we like the action of belladonna. We also make use of the *x*-ray. From its known action on the lymphatics and the glands it exerts a favorable effect on the over-activity of the gland in exophthalmic goiter, and in some cases seemingly develops something of a capsule and partially changes the character of the tumor. While its effect may not be permanent it is a valuable adjunct in preparing advanced cases for surgical procedure. We have had no personal experience with the use of serum from thyroidectomized animals or milk from thyroidless goats. The cases and reports we have seen have given conflicting and not convincing evidence. J. Rodgers, of New York, is now experimenting with a thyroid serum which it is claimed is especially valuable in exophthalmic goiter. It is possible that much may yet come from autotoxic serum treatment.

There is a type of thyroid, usually enlarged throughout the whole gland, appearing at about puberty and during the succeeding ten years which Bloodgood calls simple goiter. In these cases dilated acini are filled with comparatively normal colloid. Similar conditions often occur in pregnancy. In most of them the tumor disappears without treatment. Obstinate cases can be cured by some external application or treatment with iodin or organotherapy. In fact, it is reported (Bull's system) that Kocher claims 90 per cent. of all goiters can be so improved by medical treatment as to render operation unnecessary.

Typical exophthalmic goiter may also exist as a symmetrical enlargement. The irregular enlargement may be adenomata, cysts or unevenly developed colloid goiter. Malignant disease in the thyroid also occurs in irregular enlargements, and Bloodgood states truly that when the disease has progressed so far that a differential diagnosis from benign tumor is possible it is also probable that it is too far advanced to cure. For patients with irregular nodular tumors early operation should be advised. Sarcomas may be more uniform in appearance and cystic. Most of the bulging tumors, evenly rounded and covering the front of the neck, are the cystic or colloid cystic type, with a heavy capsule, in which may be a thinned-out layer of the remains of the gland.

In some cases pressure atrophy seems to have destroyed all the gland, yet, as complete removal of these encapsulated masses or cysts does not often cause myxedema, it is probable that the system becomes accustomed to the very gradual withdrawal of the thyroid secretion. In three cases we have removed all of such encapsulated growths without cachexia, although it is possible that accessory thyroids were carrying on the function. One of the three was a large single cyst, the other two were cystic colloid, one measuring 22 and the other 19 inches across the tumor from one side of the neck to the other.

Loss of voice from tumor pressure occurs more often in malignant than in other tumors. The adenomatous growths, fetal and cystic, are common and represent a species of goiter frequently found in children and young adults. Cysts may follow hemorrhage, but more commonly develop from adenoma and colloid degeneration. Echinococcus is infrequent, but must be considered. The necessity of a second operation on goiter is rare, according to Bergeat, being required in only twelve cases out of 600.

Wolff states that when one-half of the gland has been excised for hypertrophic goiter the remaining half always diminishes. This is confirmed by Riverdin, Kocher, Poncet and Wöeffler. It has also been our experience. We do not believe in the semi-surgical treatment of goiter, that is, the injection, puncture and drainage methods which are nearly as dangerous as radical operative measures. Exothyreopexy or open displacement of goiter, Jaboulay's method, is merely mentioned.

THE RELIEF OF EXOPHTHALMIC GOITER.

The removal of the cervical sympathetic ganglia, as advocated by Abadie and Edwards and popularized by Jonesco and Jaboulay, we have not considered as effective as the operation on the diseased organ itself. Rehn's report makes it less than half as favorable. Surgeons do not seem to appreciate the effect of this operation and the ligation of arteries, also the experimental work on the parathyroids, in destroying the lymph channels which drain the thyroid. Division of the isthmus for the relief of pressure is not effective, as the pressure is on the sides of the trachea and not on the top except in cancer.

During the past seventeen years we have operated on 300 thyroids, with 11 deaths. Of these 110 were for exophthalmic goiter, with 9 deaths in all and but two in the last 64 cases. Two deaths in the early work were from accepting almost moribund cases as surgical risks. Among the remaining operations, representing cysts, colloids, adenomata and parenchymatous, including 9 malignant, tumors, there were but 2 deaths, 1 on the eighth day from pneumonia, the other from tracheal collapse following removal of carcinoma. One case was a large lingual thyroid, 3 were tumors of the pyramidal lobes, 2 only were accessory thyroids in the superior line of inversion, 2 were incisions and drainage for acute inflammatory conditions, 2 were for sarcoma.

We have been much pleased with the results of the surgery of exophthalmic goiter. Of those who survive the operation, 50 per cent. make an early recovery, 25 per cent. improve of the main symptoms during several months, and 25 per cent., while greatly improved, have occasional temporary relapses of the tachycardia and tremor. The exophthalmos is often one of the last symptoms to disappear.

Anesthetic.—The choice of an anesthetic is more often determined by the idiosyncrasy of the operator than the necessity of the case. There were 13 operations made with cocain infiltration. Of these 3 were completed with chloroform. While there are occasional cases in which local anesthesia may be necessary, we have noticed but little difference in the shock or general condition of the cases from the anesthetic employed. We now use ether anesthesia, preceded twenty minutes by hypodermic of 1/6 gr. of morphin and 1/120 gr. atropin. The table is placed in an elevated slanting position with the head up (reverse Trendelenburg). The tumor is rendered prominent by a roll beneath the neck if it does not interfere with respiration.

Operation.—We prefer the collar or transverse incision. In tumors of medium size this crosses the center of the tumor, in larger tumors it crosses the upper third and the lower flap is split vertically to the sternum if necessary.

The incision is through skin and platysma muscle, the flap being raised to expose freely the muscles covering the gland, namely, the sternohyoid and thyroid, the inner portions of the sternomastoid and omohyoid. In medium-sized growths muscle separation will permit of the delivery of the tumor. The muscle section of the sternohyoid and thyroid group, if made, should be near their upper attachment so as not to interfere with their nerve supply and also to break the line of scar formation from that part of the skin. After the removal of the gland, the severed muscles are carefully united by suture. The upper section also permits of early ligation of the superior thyroid artery which is the key to the situation.

The more firm and rounded tumors, with a strong capsule, can be readily enucleated after incising the capsule and penetrating the gland tissue to the cyst. We usually loosen the gland from the outside of the capsule first. On viewing the tumor, the true capsule has the luster and appearance of peritoneum. If one is not sure, incise between the vessels. Should hemorrhage be severe, lifting up the tumor by its capsule will reduce the bleeding until sutures can be placed for its control. In parenchymatous and colloid tumors we make extirpation of one lobe and the isthmus. After exposing it the upper pole is elevated and the superior thyroid artery is cut between the ligatures. The lateral veins are clamped and cut, the lower pole is elevated into the wound, incision is made along the outer posterior border, and the capsule is brushed off with gauze to the median line. As a rule, the inferior thyroid is now ligated close to the tumor as the capsule is brushed back. This leaves the nerve behind and usually out of sight. The isthmus is clamped and closed by suture. If the enucleation method for adenoma and cysts leaves a badly torn lobe it can be removed. Sometimes extirpation of one lobe is made and enucleation of cystic masses is done on the opposite side, after the method of Porta, Billroth and Socin. The resection method of Mikulicz was only employed in one case, but with good result. The ligation of the thyroid arteries as a method was not practiced. We avoid rough handling of the portion of gland to be left.

Should there be a large area of cut gland exposed it is burned over with carbolic acid, followed by alcohol, or often Harrington's No. 9 solution is applied over the cut tissues to close the lymph absorbents and favor drainage. If there has been but little traumatism we do not drain. Large incisions and large cavities we drain temporarily. All exophthalmic cases are drained as freely as the most septic wound.

These cases absorb some wound secretion containing colloid, causing rise in temperature and increase of pulse the next day. To delay absorption, especially in exophthalmic goiter, patients are given large quantities of salines by the bowel directly after the operation and for the first two to four days. If not retained by the bowel, they are given subcutaneous administration.

The wound is closed by subcuticular suture, great pains being taken to unite the platysma to prevent spreading of the scar.

OPERATION FOR THE SHORTENING OF THE BROAD LIGAMENTS.

AN ANATOMIC AND CLINICAL STUDY.*

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The material underlying this study was as follows: Forty adults and a larger number of pelves of newborn infants were dissected. Microscopic sections were made in various planes of the broad ligaments. Serial sections were made of these structures in fetuses of from three to six months, and also of pelvis of younger

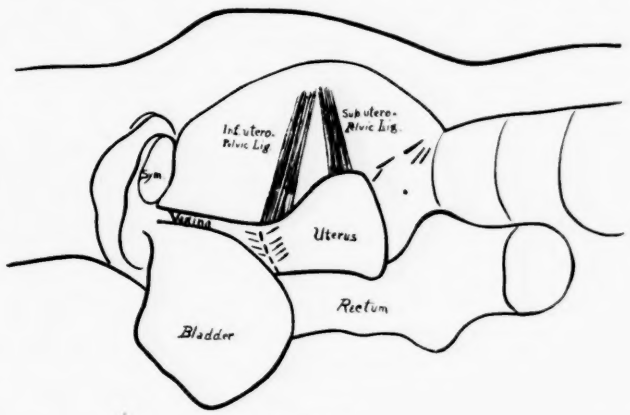

Figure 1.

embryos. The whole clinical study is based on 46 cases operated on in the past four years.

Works on anatomy are in accord in describing the broad ligament as formed of two layers of peritoneum. It is described in a recent work by my distinguished teacher, Waldeyer,[1] in a general way as composed of two serous layers, between which are vessels and nerves, many smooth muscle fibers and more or less connective tissue.

This generally accepted opinion becomes questionable when it is considered that the peritoneum, strictly speaking, can be dissected from the pelvis complete, except from the fundus of the uterus, leaving the ligaments intact. This furnishes indisputable evidence that the accepted description of the broad ligaments is inadequate, and that they are true ligaments.

In corroborating this statement the dissector must have a clear notion as to what is comprised by the peritoneum. It is incorrect to regard all the fibers below the endothelial layer of cells as comprising the peritoneum. I have in course of preparation an extensive

* This article was received in July, 1906.
* Read before the South Kansas Medical Society, April 18, 1906.
1. "Das Becken," p. 530.

exposition of this subject and a detailed discussion can not be entered into at this time. It may be anticipated, however, that I regard the peritoneum as composed of a layer of endothelial cells, an elastic layer and a thin layer of looser connective tissue. The actual thinness of the peritoneum can be appreciated by picking up a mesentery on the finger and noting the delicacy of the double thickness so presented. When this is kept in mind the statement that the peritoneum acts as a suspensory ligament nowhere under any condition will not seem extravagant. The peritoneum covers all the intra-abdominal suspensory ligaments but is nowhere identical with them. This is particularly true of the broad ligament, which is the strongest of them all.

When the broad ligaments are exposed, by the removal of the peritoneum, two bands are seen extending lateralward from the uterus. The upper one, arising from the cornu of the uterus, has its upper border immediately below the origin of the mesosalpinx. Its lower border extends from 5 to 15 mm. below the ovarian artery. The fibrous bands are arranged about this vessel for the greater part of its extent across from the pelvic brim. The lower ligament begins at the point of approach of the uterine artery to the uterus. A few

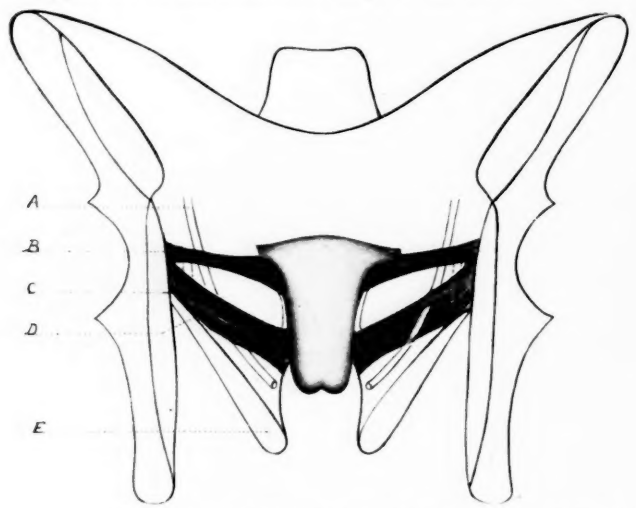

Fig. 2.—A. Ureter. B. Superior uteropelvic ligament. C. Uterine artery. D. Inferior uteropelvic ligament. E. Levator ani.

fibers pass above this vessel, as also above the ureter, but by far the greater part is below. At one time in the development no fibers are to be found above the artery and ureters but as early as the fourth month a few fibers pass above it. Below the entrance of the artery the ligament forms dense masses of fibers and continues to become more dense until the insertion of the vagina into the cervix is reached. At this point of insertion fibers unite with the upper portion of the vagina. These are not of great importance and are of relatively late appearance developmentally. The unimportance of these fibers, as well as those passing above the uterine artery, can best be appreciated by the ease with which blunt dissection from these structures can be made on the operating table.

The upper ligament extends directly lateralward from its point of origin to meet the wall of the pelvis at the white line or just above it. The lower band extends lateralward and upward, from the point of origin already described, to meet the pelvic wall immediately below the upper band. The fibers of the two bands intermingle at their attachment to the pelvic fascia. Some of the fibers pass upward above the pelvic brim to become continuous with the retro-peritoneal fascia. The extent of the insertion varies in the different subjects dissected. Some experience is required to demonstrate them with facility. In subjects hardened in strong formalin no difficulty should be experienced. In fresh subjects the dissector is likely to lose a portion of the fibers in the removal of the peritoneum if care is not exercised. Figure 1, which is a faithful reproduction of a specimen preserved in my laboratory, gives a good idea of the size of these structures.

It would be more in accord with the usages of descriptive anatomy to describe the ligaments as arising at the white line and having their insertion in the cornu and utero-cervical junction respectively, but in dissection it is more convenient to begin the dissection at the uterine end of the ligaments. If it is desired to designate these structures by a separate name, that of superior and inferior utero-pelvic ligaments is suggested. Or, if it is desired to have names in harmony with the B. N. A.,

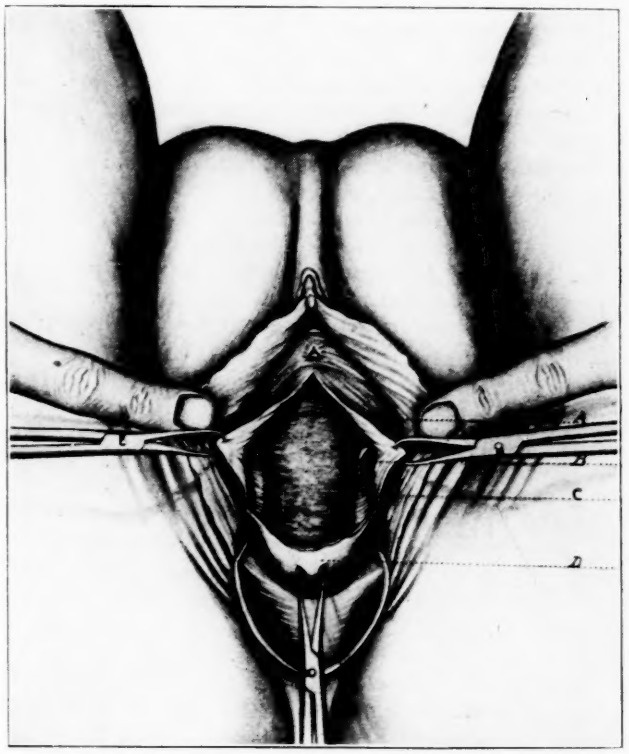

Fig. 3.—A. Ureter. B. Uterine artery. C. Inferior utero pelvic ligament. D. Cervix.

ligamentum utero-pelvicum superior and lig. utero-pelvicum inferior might be appropriate.

Microscopically these ligaments are composed of dense bands of fibrous tissue with an interlacement of smooth muscular fibers. The loose areolar tissue is situated, for the most part, subperitoneally and above the lower ligament. This statement can be best appreciated by the study of fetal pelves.

The relation of the uterine ligaments to the uterus, as they concern us in a surgical way, may be understood by reference to Figure 2. It will be observed how the uterus is anchored by these structures and what the effect on the position of the uterus is when they are elongated, and conversely the effect on the descensus when the ligaments are shortened.

Figure 3 shows the ligaments as exposed by vaginal incision. They can be readily dissected out with the end of the finger and freed from the uterine artery and

from the ureter if desired; the latter, however, is not necessary. When loosened in this way the ligaments can be drawn out from 3 to 6 cm., depending on the degree of prolapse, without difficulty. Figure 4 shows the ligaments drawn out and attached.

To the experienced vaginal operator, familiar with pelvic anatomy, little more need be said. I have hardly done the operation exactly twice alike. The later operations have, however, been fairly uniform. A transverse incision is made in front of the cervix and the end of the ligament exposed by passing the finger between it and the vagina, thus getting below and behind it. It is then easy to follow it up as far as the uterine artery. With care the peritoneum can be lifted up without injury. In the earlier operations the artery was tied if the uterus was heavy and the patient near the menopause. If it is desired to do so the vessel can be tied extraperitoneally. After the exposure of the ligaments they are severed between two ligatures. The first ligature is passed as closely as possible to the cervix, the other 1 cm. or less lateralward. If the uterine artery

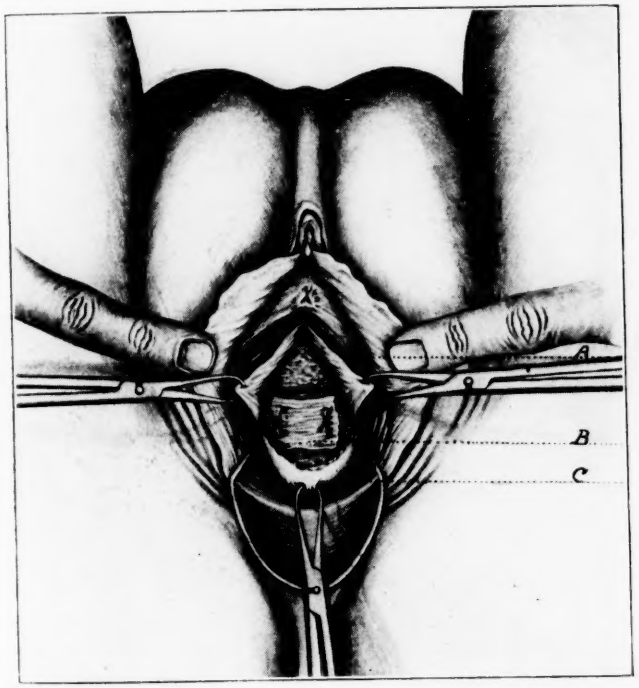

Fig. 4.—A. Ureter. B. Inferior uteropelvic ligament overlapping C. Cervix.

is tied this precaution is unnecessary. After free exposure of the ligaments they are overlapped as far as may be necessary to raise the cervix high enough. The method of overlapping is unimportant. An imitation of the method used by Mayo in umbilical hernia is satisfactory and easily applied. Pyoctannin gut is used for all sutures, plain gut for ligatures.

I have made use of this operation in all cases of prolapse. In cases of prolapse of high degree either a Dührssen fixation or a Freund-Wertheim has been added.

In patients in the child-bearing age I have added to this shortening of the uterine ligaments the shortening of the round ligaments to hold the fundus forward. This is done by a method believed to have some points of superiority. It is briefly as follows: A Wertheim incision is made over the pubes and the abdomen is opened according to his method. The pelvic contents are examined and given the needed treatment. The round ligaments are reached by retracting the lateral angles of the wound thus exposing the external inguinal ring. A curved forceps is passed along the inguinal canal and passed into the abdomen and the ligament siezed subperitoneally and dragged along the inguinal canal into the external ring. The grasp of the ligament within the abdomen is guided by the index finger of the left hand within the abdomen. By this method the peritoneum over the round ligament is not opened and there are no extraneous hands to cause trouble and only preexisting openings are utilized. If the uterus is fixed by adhesions this operation must precede the shortening of the uterine ligaments, otherwise it is done afterward. As a matter of fact fixed uteri are usually not prolapsed, thus do not require a shortening of the uterine ligaments. The operative results have been satisfactory. I do not offer the operation as a finished product but I believe the operation is mechanically more correct than those now employed. As to the correctness of the anatomic observation I feel confident.

A CASE OF CHRONIC OSTEO-ATROPHIC ARTHRITIS.*

R. S. LAVENSON, M.D.

Assistant Pathologist to the Hospital of the University of Pennsylvania, and to the Philadelphia General Hospital; Associate in the William Pepper Laboratory of Clinical Medicine; Visiting Physician to the Philadelphia Home for Incurables.

PHILADELPHIA.

The extraordinary features presented by the bones and joints of the patient forming the subject of this communication justify, in my opinion, the publication of the case as an almost unique one.

Patient.—K. I., a woman aged 54, white, single, and a native of Ireland, is an inmate of the Philadelphia Home for Incurables.

Family History.—Her family history presents no features bearing any relation to her own condition. There is no history of rheumatism.

Previous Medical Condition.—The patient's previous history shows her to have been strong and healthy excepting for some undeterminable infection when she was about 10 years old. Her work was confined to household duties. At the time of the onset of the present trouble she was a woman of about 5 feet 3 inches in height, weighing in the neighborhood of 135 pounds.

Present Illness.—About twenty-seven years ago the patient noted some pain and stiffness in the right hip, coming on after a severe wetting. This disappeared within a few weeks, and for a year she was entirely well. At this time pain and stiffness occurred in the third toe of the right foot. Very shortly after, the right knee was similarly involved, and then successively, the right hand and wrist and the left wrist. Later, most of the remaining joints of the body were involved, and within a few months from the onset of symptoms in the toe, practically all the joints of the body were affected. There was some swelling, but pain on movement and stiffness were the most prominent features. The patient does not recall having had any fever at this time. About twenty years ago, approximately six years after the onset, the patient noted that the thumb of the right hand was becoming shorter, and soon after observed a similar process in all fingers of both hands. There was a gradual progression of this shortening until a few years ago, since which time she believes there has been no increase in the process.

Physical Examination.—The patient is an extremely small woman, sitting continuously in a chair with the trunk flexed at about a right angle to the thighs and the head slightly

* From the William Pepper Laboratory of Clinical Medicine, Phoebe A. Hearst Foundation.

flexed. She is able to execute only the slightest movements of arms or head. The examination of the thoracic and abdominal viscera reveals no unusual features. On account of the inability of the patient to extend the body, the measurement of her height is impossible, but estimation places it at not more than 4 feet 10 inches. The examination of the bony framework and joints reveals the following: In the neck there is a lateral motion of approximately 5 degrees. Flexion and extension are limited to 10 degrees. There is very limited motion in the spine. Over the sternum, commencing an inch below the suprasternal notch, is a bony prominence, one inch in length and two inches in breadth, which shades gradually to the level of the surrounding tissue. The measurement from one acromial process to the other is ten and one-half inches. From the right sterno-clavicular articulation to the right acromion is five and one-half inches. From the left sterno-clavicular articulation to the left acromion is four inches. Both shoulders are completely ankylosed. The right elbow is ankylosed at an angle of 90 degrees. The left elbow permits of a motion from almost complete flexion to almost complete extension. There is marked relaxation of the bones entering into the left elbow so that a deep groove is visible both in the line of the articulation and extending from this downward between the radius and the ulna. The measurement from the acromion to the external condyle is ten inches on both sides. From the external condyle to the wrists is seven inches on both sides. Both hips are completely ankylosed, the right at an angle of about 110 degrees with the trunk, the left at an angle of about 140 degrees. Both knees are completely ankylosed, the right at an angle of 130 degrees and the left at an angle of 160 degrees. The ankle permits of approximately 25 degrees of motion in the direction of flexion and extension. There is no lateral motion. In the left ankle the flexion and extension are limited to 10 degrees. The toes on the left foot are moderately free. In the toes of the right foot motion is extremely limited. The right wrist admits of 10 degrees of flexion and extension. The left wrist is completely ankylosed in a slightly flexed position. In none of the larger joints can any bony outgrowths be determined by palpation.

The most interesting features in the case are presented in the fingers and hands. The fingers have, without an exception, become greatly shortened. Since this shortening is due apparently to bony change in which the soft tissues have not kept pace, the latter are thrown into folds, giving the phalanges an appearance of being telescoped into each other. Associated with this shortening of the fingers there is relaxation of most of the joints, so that the hands present, especially on manipulation, a most grotesque appearance. Some of the fingers can be extended to a right angle with the metacarpal bones, so that they give the impression of being nothing more than tags of soft tissue. The right hand measures from the wrist to the tip of the middle finger four and one-half inches; from the wrist to the distal end of the middle metacarpal bone two and three-quarter inches. The right hand measures from the wrist to the distal end of the middle metacarpal bone two and one-half inches. In the little finger of the right hand there is almost complete ankylosis at the second phalangeal joint. In the fourth finger there is partial ankylosis in the first phalangeal joint. In the index finger there is partial ankylosis in the metacarpo-phalangeal joint. In all of the other joints of the right hand there is more than the normal amount of motion, due to the relaxation spoken of above. In the left hand there is slight limitation of motion in the distal joint of the little finger. In the third and fourth fingers there is considerable limitation of motion in the distal joints, and in the thumb there is almost complete ankylosis at the metacarpal articulation. In all the other joints of the left hand the relaxation is marked.

Fig. 1.—A radiograph of the right hand.

Fig. 2.—A radiograph of the left hand.

Urinalysis.—Clear, amber, slight flocculent sediment. Sp. G. 1024. No albumin. No sugar. A small amount of epithelium. Some W. B. C.'s. Some cylindroids.

Blood.—Hemoglobin, 84; R. B. C., 4,400,000; leucocytes, 10,560. Differential count: Polymorphonuclear neutrophiles, 74 per cent.; eosinophiles, 1.8 per cent.; basophiles, 0.3 per

ent.; lymphocytes, 15.2 per cent.; large mononuclear leucocytes, 7.9 per cent.

The accompanying skiagraphs made by Dr. G. E. Pfahler, show the changes in size and form of the bony parts responsible for this remarkable clinical picture of the hands. The soft parts show the folds caused by the accommodation of the flesh to the changes in the bony parts. The joints, inclusive of the wrist joint, are all obliterated. The distal joints of the middle and ring fingers of the right hand, the distal joints of the middle, ring and little fingers of the left hand and the wrist joint are obliterated by fibrous or bony union, the remaining joints by reason of the absorption of bony tissue. Luxations are frequent. There are a few exostoses, notably at the proximal ends of the phalanges of the thumb of the right hand and at the proximal ends of the proximal phalanges of the ring and little fingers of the left hand. In the bones the most prominent features are a general rarefaction of the phalanges, apparently a result of lacunar atrophy. Many of the phalanges are atrophic and shortened and, as it were, pegged at one end. This is especially noticeable in the distal end of the proximal phalanx of the thumb, and the proximal ends of the middle phalanges of the ring and middle fingers of the right hand, and in the distal ends of the proximal phalanges of the middle, ring and little fingers of the left hand. The most profound changes are where entire phalanges have apparently been absorbed, giving radiographically no indication of the preservation of bony tissue. This is the case

Fig. 3.—Photograph of a wax cast made from the right hand.

with the middle phalanx of the little finger and the middle phalanx of the index finger of the right hand and the proximal phalanx of the thumb and the middle phalanx of the index finger of the left hand. That the same process of absorption has occurred in other bones, of which, unfortunately, no skiagraphs could be made, there can be little doubt, as indicated by the measurements of the extremities, as given above, and by the undoubted decrease in height of the woman since the commencement of the disease.

A review of the literature presents but one case bearing any resemblance to the one here reported. In that case Watson[1] presented photographs and skiagraphs of the hands which show a resemblance to my case that is really striking. A brief summary of the case is as follows:

The patient was a man 47 years of age, who had enjoyed good health until he was 39 years old, when he had an attack of what was diagnosed as acute articular rheumatism. Soon after multiple tumors developed over the entire surface of the body. These were described by Crocker as of myeloid structure. Later these tumors gradually disappeared and at the end of two years the patient was entirely free from them. At about this time he was suddenly seized with violent pain in the shoulders and hips. It was then that he noted the fact that his hands were growing smaller, since which time this process has been steadily progressing. The hands now show a marked atrophy of the phalanges, as in my case, and the consequent wrinkling of the skin, well described as "telescoping." The knees are almost completely fixed in a semiflexed position. The shape of the joints is not altered and there are no osteophytes. No other joints are affected, but the patient thinks that there has been some shortening of the face. The only other noteworthy feature of the case is the fact that the patient's blood contained 15 per cent. of eosinophiles in a normal leucocyte count.

The case reported by Schultze,[2] although scarcely similar to mine, presents some features suggestive of the same type of case:

The patient was a woman, aged 39, who, when she was 27 years of age, first showed signs of a spondylose rhizomelique which became progressively worse. Associated with this was an atrophic condition of the bones, especially of the arms and fingers. The circumference of the wrist joint was 13 cm. and the width of the hand, exclusive of the thumb, 7 cm. The patient had a younger brother with pseudohypertrophic muscular atrophy, also showing some bony atrophy.

Without more exhaustive details it is impossible to

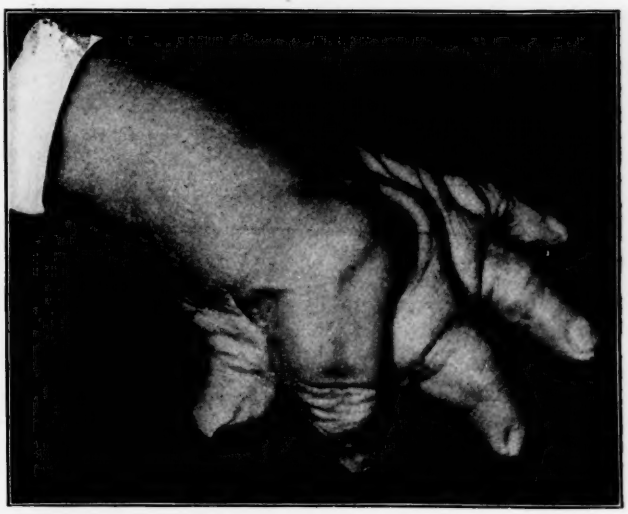

Fig. 4.—Photograph of a wax cast made from the left hand.

assume any great resemblance between this case and the one here reported.

In practically all of the various types of cases included under the term rheumatoid arthritis, two pathologic processes are at work: a destructive process and a proliferative process. In one type of cases the proliferative changes predominate, resulting in fibrous ankylosis, or, if this fibrous tissue become ossified, a true bony ankylosis results, arthritis ankylopœtica (Ziegler). In another type the destructive and proliferative changes occur in a more equal distribution. We find first the central portions of the articular cartilages undergoing degeneration, at the same time proliferation occurring about its margins; later the ends of the bones coming into apposition by reason of the degeneration of the cartilage, undergo atrophy, partly from pressure, and later the opposed surfaces become compact and eburnated. At the same time a moderate amount of lacunar atrophy of the bone usually occurs. In this association of destructive and proliferative changes, however, no such degree of atrophy has been described as is found in my

1. Brit. Med. Jour., March 10, 1906.

2. Deut. Zeitschr. für Nervenheilkunde, vol. xxiv, 1899.

case. Moreover, this atrophy has occurred in many of the bones practically independent of proliferative changes. This extraordinary degree of atrophy suggests some influence other than those due to the local joint disease as playing some part in the process. The most rational consideration is naturally of some trophic disturbance, either primary or reflexly, induced by the joint disease. The determination of these factors must await further observation of similar cases and, above all, postmortem findings.

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A NEW PRIMARY POSITION IN THE BLOODLESS TREATMENT OF CONGENITAL HIP JOINT DISLOCATION.*

FREDERICK MUELLER, M.D.
CHICAGO.

(PRELIMINARY REPORT.)

About three years ago the bloodless treatment of congenital hip dislocation won notoriety and public attention in this country. Dr. A. Lorenz, the originator of the method, promised about 50 per cent. of anatomic cures, a figure which is also proven by other statistics, provided that the operator masters the technic of the operation completely.

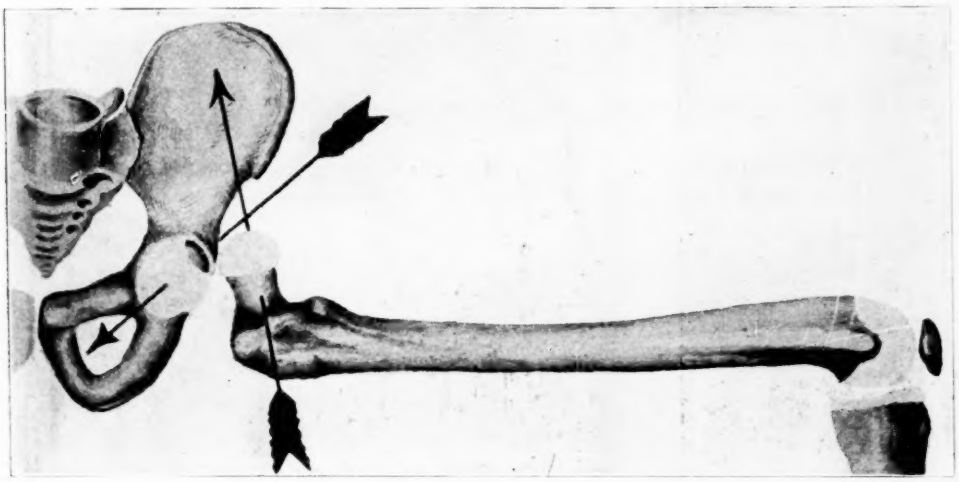

Fig. 1.—Diagram of a femur with considerable twisting of the upper femur end in the Lorenz primary position. The back of the femur (or rather what we call such in ordinary femurs) faces the frontal plane. The upper part of the capsule, which covers the head, is cut away in order to show the entrance to the pocket-shaped recessus through which the femur neck has to pass during the reposition. The axes of the pocket-shaped recessus and the femur neck are represented by arrows.

LORENZ PRIMARY POSITION: ITS FAILURES.

But with the original Lorenz method, even the best technic and the most careful after-treatment can not prevent at least about 40 per cent. of subspinal positions, or, as they are often called, anterior superior redislocations.

For many years this fact has been known. In the beginning these partial failures in obtaining anatomic result have been attributed to various causes, such as extreme shallowness of the socket, poor technic or incapability of the method in fixing the head of the femur securely enough into the socket. Very soon, however, the real causes were found out, and the anatomic conditions of the upper femur end were made responsible for these failures. The position of the femur neck against the shaft of the femur was recognized especially as being of the greatest importance for the prognosis of a given case.

In Munich, as early as 1899, Lange[1] alluded to these conditions, and as the subject of my paper is based on similar reasons, I may recapitulate Lange's conclusions in brief. Lange stated that the angle of inclination between the neck of the femur and the shaft, which, in normal cases, is something like 130 degrees, is in cases of congenitally dislocated hips mostly found either increased or decreased similar to the increasing or decreasing of this angle which we find in cases of coxa valga or coxa vera. The angle of twisting of the femur neck, that is, the angle which is formed by the axis of the neck and the horizontal axis of the femur condyles (seen in a vertical projection), is mostly found increased. In extreme cases it is nearly 90 degrees. Thus the femur neck, instead of facing the socket as in normal cases, looks straightforward by the socket in such cases of congenital hip joint dislocations, whenever we place the thigh in the normal position of the erect standing person. From this Lange concludes that the only fit primary position, that is, the position in which the cast should be applied, should be a medium abduction with intrarotation of the thigh.[2]

To these anatomic explanations I have very little to add, and this especially with regard to the conditions of the socket and the capsule. As we know, the socket is shallow in most of the cases. The capsule covers the empty cavity tightly, leaving an entrance only in the posterior superior quadrant of the socket. In this way a pocket-shaped recessus is formed by the socket and capsule known as "Pfannentasche." As its entrance lies in the posterior superior quadrant of the socket the axis of this recessus goes from above, behind and sideward to down, in front and inward. Around the entrance of the recessus which is formed in its anterior part by the capsule fibers, and its posterior part of the upper rim of the socket the funnel-shaped upper part of the capsule is inserted which covers the head. In older cases the narrow part of the capsule which corresponds to the entrance of the pocket-shaped recessus is also often described as the hour-glass-shaped contracture of the capsule.

The possibility of curing any given congenital hip joint dislocation by holding the head of the femur in the socket in the pocket-shaped recessus has been proven beyond doubt, and likewise the possibility of producing the phenomenon of reposition in almost all cases, and yet we obtain only from 50 to 60 per cent. anatomic cures.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June 1906.

1. Lange: "Die Behandlung der angeborenen Hüftverrenkung," Sammlung klin. Vorträge N. F., No. 240, 1899.

2. For another discussion of the subject the reader is referred to Schede: "Die angeborene Luxation des Hüftgelenkes," Ftschre a. d. Gebiete der Röntgenstr. Supplement No. 3.

To explain this enigma one has to consider that the above-mentioned twisting of the upper femur end is to be found in at least about 50 per cent. of all cases of congenitally dislocated hips, and that in the original primary position advocated by Dr. Lorenz such a deformed femur neck, respectively femur head, can not stay securely in the socket or the pocket-shaped recessus, as shall be explained in the following lines:

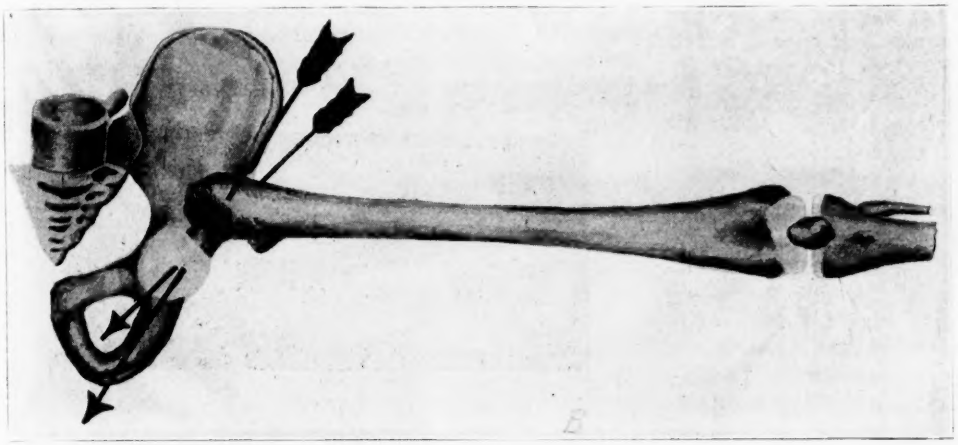

Fig. 2.—Diagram of a femur neck with considerable twisting of the upper end in the new primary position. The arrows (representing the axes mentioned in Figure 1) form an angle not to exceed 45 degrees, which is always compatible with a secure fixation of the femur head within the pocket-shaped recessus.

Let us suppose for a moment that we have a thigh the axis of the neck of which is twisted for about 90 degrees against the axis of the femur condyles. We suppose, further, that by means of the Lorenz maneuvers we were able to reduce the head in the socket and place now the femur in the so-called Lorenz primary position, the rectangular abduction, where the interior condyle of the femur faces the frontal plane. If the femur neck is twisted as presumed, it now necessarily runs in a vertical direction, nearly parallel to the longitudinal axis of the body.

Recapitulating what was said about the axis and the entrance of the pocket-shaped recessus, we see immediately that our femur head can not possibly stay in the socket or pocket-shaped recessus, after the placing of the thigh in the Lorenz primary position.

The reason is evident: The head and the neck of the femur can only be introduced and stay in the pocket-shaped recessus if the axis of the neck of the femur and that of the pocket-shaped recessus run in the same direction. We comply with this postulation perfectly by making the reduction when we bend the thigh rectangularly, rotate it slightly inward, extend it and press against the trochanter, thus pushing the head into the pocket-shaped recessus.

If we then place the thigh in the Lorenz primary position, we find that the axis of the femur neck instead of running from sideward, above and behind to down inside and front, runs from downward straight upward, that is, in an almost opposite direction.

Therefore, in the Lorenz primary position such a femur head can stay only with a part of its circumference within the pocket-shaped recessus, if at all, and only slight mechanical causes may effect redislocation. Such causes come into play later on when the children walk. All the jerks, which are caused by the walking in the cast, are transmitted by means of the knee-joint and thigh to the femur neck and head of the femur. As the neck of the femur runs from below in an upward direction, all the jerks must therefore have a component running in the same direction, and this component strives to push the head of the femur over the superior rim of the acetabulum. By these constant efforts the cartilaginous superior rim of the socket may be ground off and lowered, and the result is an anterior superior redislocation which becomes apparent when the cast is removed.

AUTHOR'S PRIMARY POSITION.

These experiences have induced me to discontinue the Lorenz primary position and to adopt a primary position, the value of which is based on the above-quoted mechanical reasons.

This primary position, which I like to call a neutral rectangular abduction, is derived from the position of reduction by simply placing the thigh in rectangular abduction in such a way that the knee cap looks toward the frontal plane. The position of the knee cap serves in this way for the determination of the position of the femur neck. Taking into consideration the fact that the angle of twisting of the upper end of the femur varies from 30 to 90 degrees, and bearing in mind the

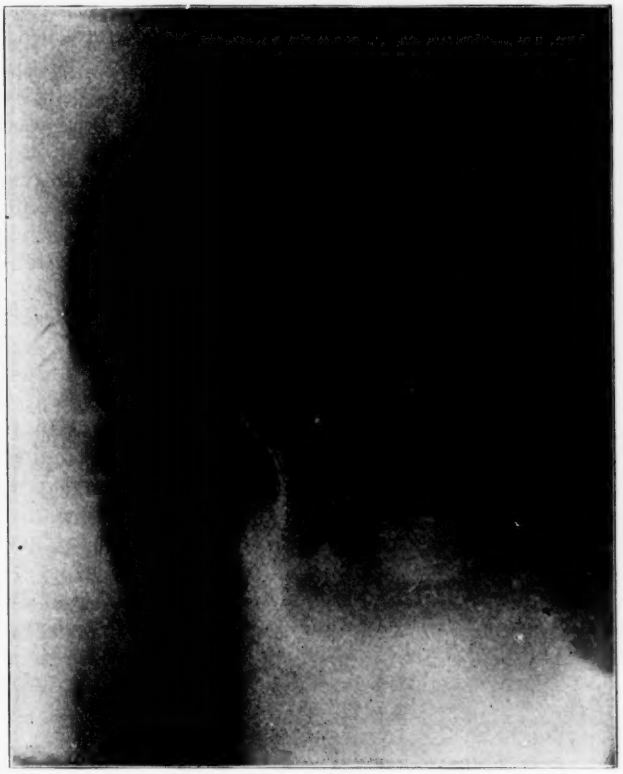

Fig. 3.—Case 1: R. S., 8½ years, girl; congenital dislocation of the left hip. First operation performed in Buda Pest (Hungary) 1900; result: posterior superior redislocation. Second operation performed in Chicago (Dr. A. Lorenz) May, 1903. Result: posterior superior redislocation. Third operation performed in Chicago (Dr. F. Mueller). Thigh placed in new primary position, October, 1903. Picture taken in April, 1906. The picture shows how deep a socket was formed in the last two years.

oblique direction of the axis of the pocket-shaped recessus, I may say that the angle formed by the axis of the femur neck and the axis of the pocket-shaped recessus is in the new primary position in no case larger than 45 degrees (in average cases, however, mostly from 15 to 30 degrees), thus guaranteeing a more than sufficient stability. In this position the head of the femur is therefore fully emerged into the pocket-shaped recessus and the axes of the neck of the femur and the pocket-shaped recessus correspond to each other as near as possible. This position is maintained by means of a cast, which reaches as far as the ankle joint or the toes. After the first days the cast around the knee joint is cut away and a pair of hinges are inserted which allow the joint all motions.

RESULTS.

The results which I obtained with this new primary position are most satisfactory. One case, for instance, which was operated on twice before, one time by Dr. A. Lorenz, both times, however, with the result of a superior posterior redislocation, gave a complete anatomic result after the third operation, at which I applied my new primary position. The *x*-ray picture (Fig. 3) shows this beautiful result now two and a half years after the operation. Many other cases in which there was not the slightest stability at the time of the operation furnished the same wished-for results with normal gait of the patients. In consideration of these facts I believe that the methodic application of my new primary position will furnish fully 100 per cent. of anatomic cures after the hips have been reduced.

A very important advantage of my modification is that it does away with the brutal widening of the capsule after the operation; also the after-treatment is very much simplified, and the ectrorotation of the thigh and leg, which remains after the correction of the Lorenz primary position for good, is entirely avoided. The efficiency of the new primary position has been further proven by my attempts to transform subspinal positions into anatomic ones by re-operation.

The results gained were surprising, as all the cases thus treated showed a central reposition after the second operation. If one considers that in the United States alone there must be at least about 1,000 cases of congenital hip joint dislocations in which the original Lorenz method could furnish but a partial cure, and if one stops to consider that all these patients have now the possibility of getting an anatomic result, one can conceive the importance of this improvement of the method.

However large the number of cases may be in which the original Lorenz operation furnished only an anterior superior redislocation and which may derive the benefit of a complete cure from the new primary position now, yet its importance lies in the future where a general application of it should make the reposition of the congenital hip joint dislocation a method giving always ideal results without any restrictions by any conditions.

FOR THE DISCUSSION, SEE PAGE 357.

Subcutaneous Injections of Cocain in Vomiting of Pregnancy.—Sokolsky reports that after the failure of all the usual measures, in a case of incoercible vomiting of pregnancy, he injected 1 c.c. of a 1 per cent. solution of cocain in the epigastric region. Benefit was apparent at once, and a complete cure was realized in the course of 8 injections. Cited by the *Semaine Médicale*, October 3.

SOME VARIATIONS IN THE FRONTAL SINUSES.*

M. H. CRYER, M.D.
PHILADELPHIA.

In 1897, and at various other meetings of this Section, I have had the pleasure of demonstrating some variations in the shape and position of the frontal sinuses. In 1902, Dr. A. Logan Turner published a work containing a most valuable and comprehensive description of these sinuses, with many of their variations. He also read an excellent paper[1] before this Section at Atlantic City in 1904, in which he stated that "the frontal sinus is not a

Figure 1.

simple chamber." He also spoke of "the existence in many instances of incomplete bony septa and partitions in its interior gives rise to one or more diverticula or recesses," and claimed that failures in operations have been caused by non-recognition of such recesses. With these and work of members of this Section, Drs. Freudenthal, Richards, Holmes, Myles and others, one would suppose the subject to have been exhausted. But seeing cases of diseased frontal sinuses which would not yield to treatment through the natural outlet, ostium frontalis, I undertook a closer study of the variations in the anatomy of the parts, finding, as a result, skulls with greater

Figure 2.

variations of recesses, pockets and diffusions than had been previously seen by myself or described. The result of some of these dissections I now present.

The typical frontal sinus as described in the text-books on anatomy is familiar to all, but those who make of this region a special study know that this description does not begin to cover the ground. The frontal sinus as it

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Operative Treatment of Chronic Suppuration of the Frontal Sinus," THE JOURNAL A. M. A., 1905, XLIV, p. 346.

actually exists is of infinite variety. It not only varies in different individuals, but in the same person one side will differ entirely from the other. There are skulls in which frontal sinuses do not exist; there are other skulls in which there is but one sinus. In the latter event, the sinus may be very small, or it may extend from one of the external angular processes to far beyond the median line of the frontal bone and upward to a point above the level of the frontal eminences or backward over the orbit to near the optic foramen. In other cases the sinus

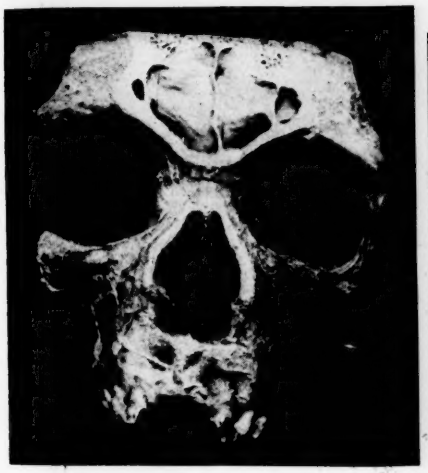

Figure 3.

Figure 4.

Figure 5.

may spread outward and backward and terminate in the great wing of the sphenoid bone; it may not only extend into the ascending portion of the bone, but also downward and backward until it becomes one common cavity with the anterior ethmoid cells and the maxillary sinus.

Text-books give two as the usual number of frontal sinuses, each having an independent outlet into the nasal chamber, but there are specimens which show no sinus whatever, there are others with one, two, three,

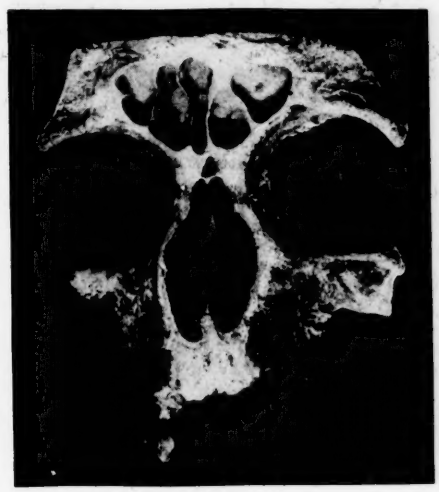

Figure 6.

four, and even five, all of the ascending portion of the bone and each having its independent outlet. These portions which pass over the orbit might be called supraorbital sinuses, especially if they have a complete separation and an independent outlet from the one which occupies the ascending portion of the bone. Some of our writers are inclined to treat these sinuses as ethmoid cells which have invaded this region; but, following the same reasoning, frontal sinuses found in the ascending portion could be called ethmoid cells invading the frontal bone, for they, like many other pneumatic spaces, are invasions into their different regions from the ethmoid labyrinth.

The anterior ethmoid cells are those which invade the frontal region and form the frontal or supraorbital sinuses and have their outlet near the anterior portion of the hiatus semilunaris. Some of the supraorbital sinuses are formed from the middle ethmoids and have their outlet into the hiatus semilunaris somewhat posterior to those from the anterior cells. Occasionally supraorbital sinuses will be found arising from the posterior ethmoid cells, and in such cases their outlets would be into the third or fourth meatus. When two frontal sinuses exist, the septum between them is complete except in

Figure 7.

very rare cases; in the great number of examinations made, only a few of these exceptions have been found, and they were apparently of pathologic origin. Two are among the specimens shown.

I have found two cases in which the internal plate or wall of the sinus has been incomplete. Dr. Makuen, Chairman of the Section, in his annual address at Saratoga in 1902, reported one of these cases in which I had found that the inner plate was lacking and the frontal

sinus had become filled with brain tissue, or, in other words, the brain had developed forward into the sinus. The other case is that of a negro in whom the bone forming the inner wall had apparently been resorbed, leaving nothing but membranous tissue for the division between the brain area and the sinus. There are also cases in which the frontal sinuses have formed and then

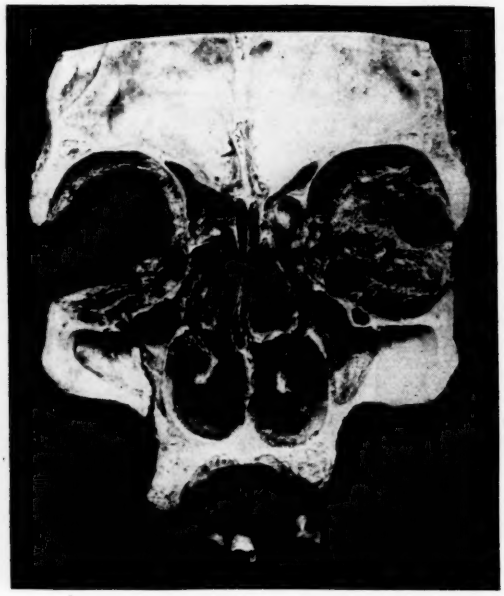

Figure 8.

so-called ethmoid cells have apparently pushed upward into them. A number of illustrations will further demonstrate these variations.

Figure 1 is made from two sections taken from the supraorbital region of the skull. The upper figure shows that the anterior portion of the frontal bone has been removed from the region of the superciliary ridges, exhibiting no indication of the sinus in the ascending portion of the frontal bone. The lower picture shows no evidence of the sinuses passing into the horizontal portion or over the orbits.

Figure 2 is made from a specimen having only a right

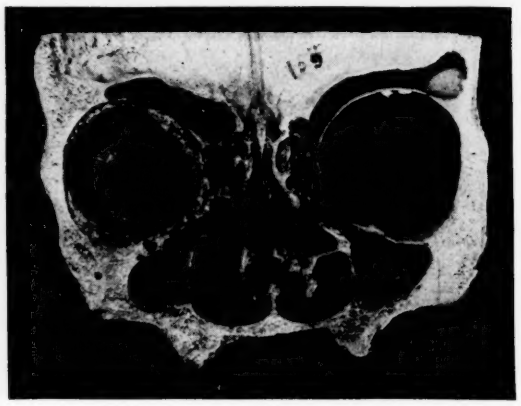

Figure 9.

frontal sinus, which extends unbroken far over to the left. This sinus extends partly over the orbit and has but one outlet.

Figure 3 shows two rather typical frontal sinuses with two outlets and a complete septum near the median line. There is also one partial septum in each sinus forming two pockets near the external angular processes. The right sinus measures horizontally 35 mm., the left 30 mm.; the depth of the right sinus is 42 mm. and the left 35 mm.

Figure 4 shows three complete frontal sinuses with three individual outlets and two complete septa. The two lateral sinuses pass backward well over the orbits.

Figure 5 is made from a skull that has four frontal

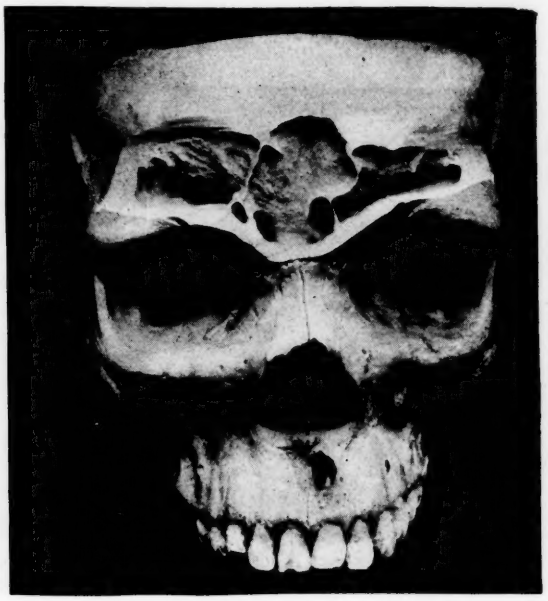

Figure 10.

sinuses, with four independent outlets and three complete septa. Some writers would class the two middle sinuses as anterior ethmoid cells which had invaded the frontal bone. If these cells should exist without the

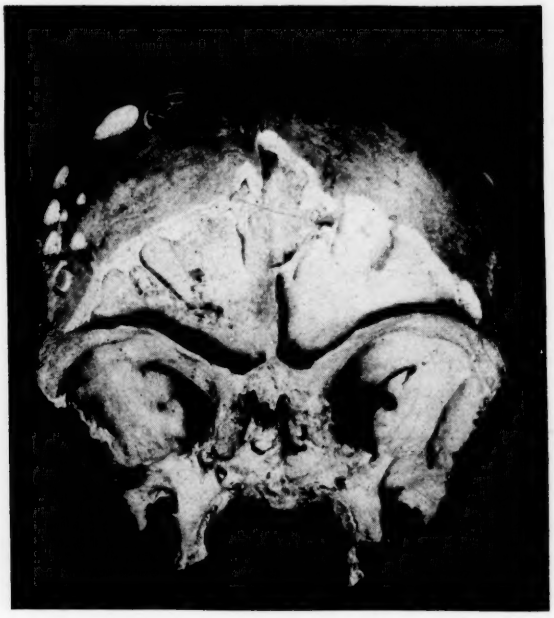

Figure 11.

two larger sinuses they would then be called frontal sinuses by the same person.

Figure 6 is made from a specimen containing five sinuses and having four complete septa. Four of the sinuses extend well upward to about an equal height.

Figures 7 and 8 are anterior and posterior views, respectively, of a specimen with two frontal sinuses of un-

qual shape and size, with the septum nearly in the median line but somewhat curved in its formation. On the right side there is apparently an enlarged ethmoid cell pushed or "blown up" into the frontal sinus. This cell or pocket has its independent outlet into the hiatus semilunaris. In the left frontal sinus there is a larger balloon-shaped cell partly divided by an incomplete septum; it has two outlets into the region of the anterior ethmoid cells. If the middle turbinates of this specimen be examined, they will be found to contain two large

Figure 12.

cells, that on the right being especially large. At the upper and inner corners of each maxillary sinus there is a deep pocket, the infraorbital sinus.

Figure 9 is a posterior view made from a specimen having two large frontal sinuses with a complete septum. The right sinus extends back over the orbit and down through the region of the anterior ethmoid cell, continuing into the maxillary sinus and making one com-

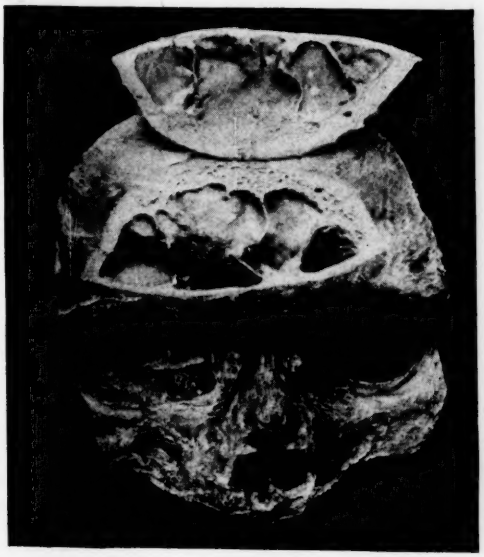

Figure 13.

mon cavity of the frontal sinus, the anterior ethmoid cells and the maxillary sinus.

Figure 10 is from a skull having two large frontal sinuses. From the appearance of the picture there are three sinuses, but the septum on the right is incomplete, making but one sinus on that side. Consequently the right sinus is very large and extends from the right external angular process transversely well over to the left side, measuring 65 mm. Its depth from the top to its outlet is 45 mm. and it extends well back over the orbit 40 mm. The left sinus extends outward to the external angular process and backward to about one-half the distance of that on the right side.

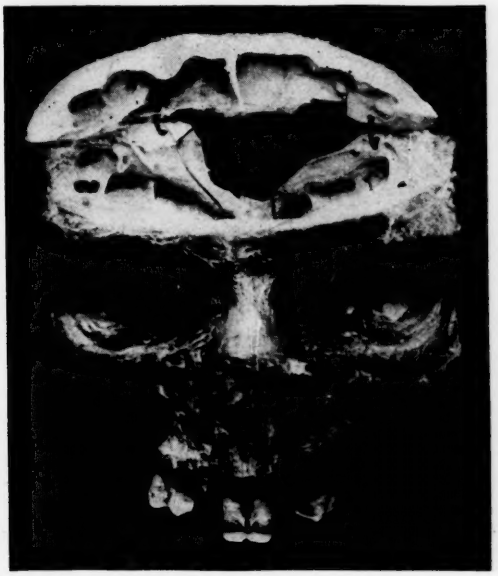

Figure 14.

Figure 11 is made from a section showing two very large frontal sinuses, the septum having a deflection toward the left side. The central portion extends higher than the frontal eminences, reaching upward 44 mm. (1¾ inches) above a line drawn across from the arch of the orbits. Such a conformation would be an important factor in performing craniotomy in the endeavor to reach the anterior portion of the anterior lobe of the cerebrum, as the frontal sinus should be avoided in all brain sur-

Figure 15.

gery on account of danger of infection to the brain from the sinus. There is marked depression of the sinus over the longitudinal venous sinus.

Figure 12, from a horizontal section above the orbitis, shows a transverse section of a large left frontal sinus, measuring 67 mm. from the left external angular process to a position over the center of the right infraorbital foramen without a septum. The right frontal sinus, measuring 40 mm., has small, several incomplete, nearly horizontal septa, making a number of horizontal pockets.

Figure 13 is made from a transverse section of the face with a portion of the bone removed to expose the frontal sinuses. That on the right is extremely large, extending from the right external angular process over toward the left and measuring 67 mm., leaving but a slight space for the left frontal sinus, which measures

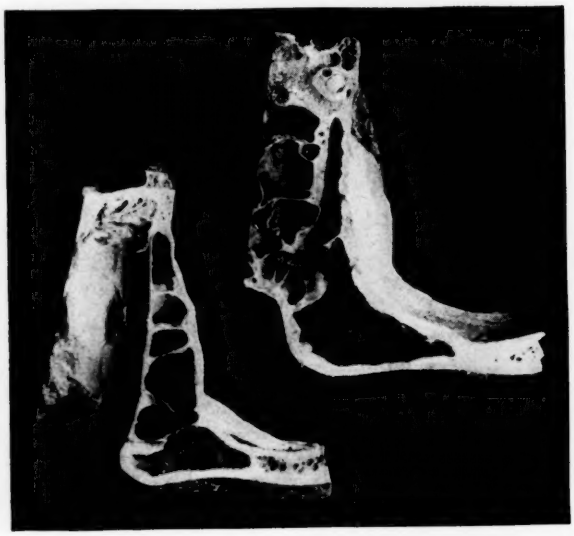

Figure 16.

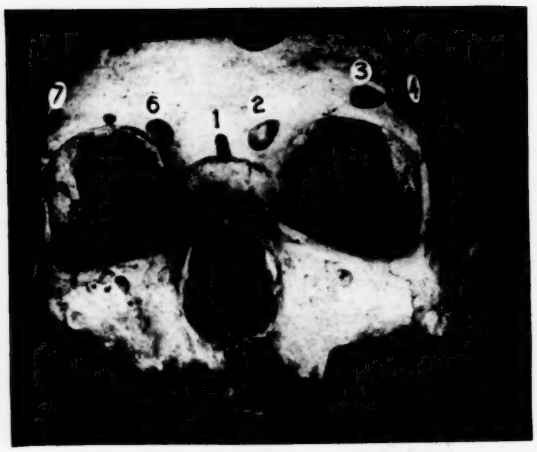

Figure 17.

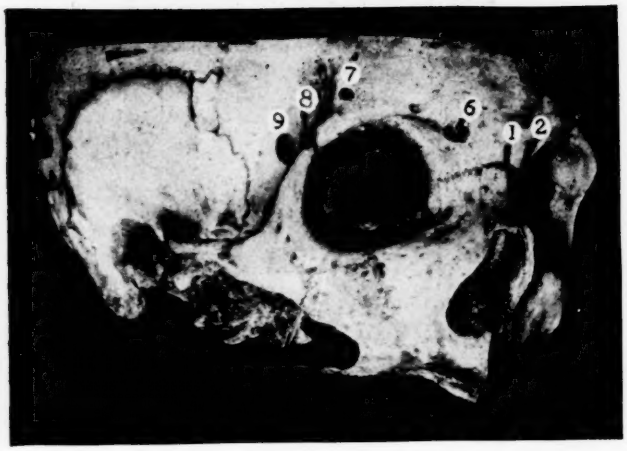

Figure 18.

15 mm. The septum between these sinuses has an inclination of about 45°. The right sinus also extends well back over the orbit and into the crista galli.

Figure 14 is made from a transverse section of the face with a portion of the bone removed, showing two very large frontal sinuses which extend backward over the orbits, where they are divided by several incomplete septa. They also extend downward and communicate directly with the maxillary sinuses. The right and left sinuses measure horizontally 50 mm. and their depth is 40 mm.

Figure 15 is a posterior view of the frontal sinuses showing two incomplete septa. The incompleteness of

Figure 19.

the septa is more than likely due to pathologic conditions.

Figure 16 is made from two specimens showing lateral views of the frontal sinuses. The lower picture is a sagittal section cut near the center of the orbit, showing in the anterior portion a lateral view of the frontal sinus

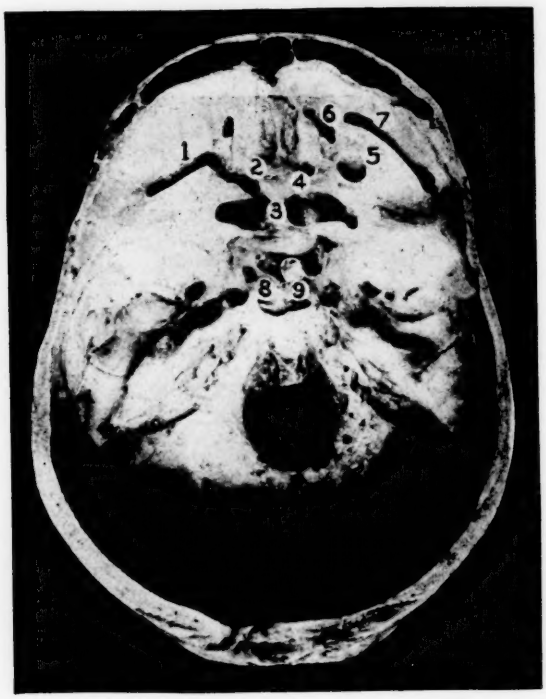

Figure 20.

divided into five pockets, all of which have one common outlet. The sixth or posterior cell communicates with the upper meatus of the nose. The upper picture is also a sagittal section cut to the median line of the os planum of the ethmoid bone. It shows a frontal sinus extending backward nearly to the optic nerve which is seen in position in the optic foramen. The frontal sinus

of the specimen passes over the orbit and is also divided into several pockets.

The skull pictured in Figures 17, 18, 19 and 20 has the largest pneumatic spaces of any skull I have dissected, not only of the frontal sinus, but of the supraorbital, ethmoidal and maxillary sinuses. The frontal sinuses may be described as commencing in the right temporal fossæ at a point near the articulation of the frontal bone with the great wing of the sphenoid (see point marked 8, Fig. 18). It extends forward and across the skull to the opposite side, then a little backward, terminating near the left great wing of the sphenoid (see point marked 4, Fig. 19). The frontal portion of this great space is divided into four compartments, three of which have a separate outlet, while the fourth is connected to one of the others by a small foramen which is placed low down in the sinus.

As already stated, the right frontal sinus commences at a point marked 8, in Figure 18, in the temporal fossæ and extends upward, forward and inward to near the nasion, measuring 55 mm. The right supraorbital sinus commences in the zygomatic fossa (see point marked 9, Fig. 18) or in the right wing of the sphenoid bone; it passes upward, forward and inward over the orbits (see point marked 7, Fig. 20). Its outlet is in the anterior and lower portion of the right frontal sinus. It measures in length 55 mm. There are also several other sinuses or cells over the anterior portion of the orbits with independent outlets (see points marked Nos. 2, 4, 5, 6, Fig. 20).

The left frontal sinus commences in the temporal fossa at a point marked 4, in Figure 19. It then passes upward, forward and to the right to the wall forming an intermediate frontal sinus. It measures 48 mm. The sinus is divided into two compartments by a septum lying at an angle of 35 degrees from the horizontal. At the lower and median end of this septum there is a small foramen which allows the two compartments to communicate with one common outlet into the nasal chamber. The left supraorbital sinus commences in the great wing of the sphenoid bone and passes slightly upward, inward and forward over the orbits. The outlet empties into the anterior portion of the nasal chamber. Immediately back of the nasion and glabella there is an intermediate sinus with an independent outlet. It is cuboidal in shape, its lateral and anteroposterior measurements are 10 mm.

The sphenoidal sinuses are large, extending well forward and laterally over and under the optic nerve, leaving but a thin portion of bone separating the nerve canal from them. The sinus extends backward and downward to the basilar process of the occipital bone (see points marked 3, 8, 9 and 10, Fig. 20). The two sinuses measure laterally 44 mm., anteroposteriorly 33 mm., depth 44 mm. The maxillary sinuses are extraordinarily large. In one there is a large, incomplete, membranous septum. The right sinus measures in its greatest depth 44 mm. and diagonally from before upward and backward 55 mm. The left sinus is 55 mm. in its greatest height and diagonally backward, upward and forward 65 mm.

It will be claimed by some that the specimens here illustrated are freaks or great exceptions. I can not so classify them. They are all from my own dissections within the past 15 years. I regret that I have no means of knowing how many skulls have been sectionized during that time, but I believe that if a thousand of the skulls which come to our dissecting rooms were examined by sectioning, a collection showing equal variations with those here described would be made; and if a thousand skulls of persons affected with diseased pneumatic sinuses were examined the variations would be found much greater and more common. If surgeons who treat this region had some way of determining the character of these sinuses in the patient their treatment could be given on a more scientific basis.

External "landmarks" to indicate the true character of these sinuses are commonly lacking, and examination through the nasal fossa will give but a slight idea. Transillumination has been used with some success, but it is not sufficiently accurate for complicated cases.

RADIOGRAPHY.

Radiograms of this region have been made for several years with much improvement. Dr. Coakley, of New York, showed some very fine ones in Philadelphia last year. Several radiographers in Philadelphia are doing good work along this line.

It has been demonstrated by all who have investigated the pneumatic spaces intimately that they exist in an infinite variety of sizes, shapes and positions, so that even clinical experience counts for little, as no two cases present like conditions. It is evident that a good radiogram, if stereoscopic so much the better, is one of the most reliable witnesses for the surgeon's dependence in diagnosing the character and the disease of the frontal sinus region.

1623 Walnut Street.

FOR THE DISCUSSION, SEE PAGE 358.

TUMOR OF THE RIGHT VERSUS TUMOR OF THE LEFT FRONTAL LOBE OF THE BRAIN.

A COMPARISON OF THE SYMPTOMS OF THE PREFRONTAL AREAS.*

WILLIAM C. KRAUSS, B.S., M.D.
BUFFALO, N. Y.

At the meeting of the American Neurological Association, Washington, D. C., May 4 to 6, 1897, I presented a paper[1] and specimen showing a glioma situated at the base of the second frontal convolution on the right side of the brain; to-day I present a glioma occupying the same relative position on the left side of the brain. The specimen exhibited to-day, however, is a recurrence of the growth, the original tumor having been removed by operation Nov. 10, 1905, by Dr. Roswell Park of Buffalo, N. Y.

In comparing these two tumors or lesions of the frontal lobes of the right and left hemispheres respectively, I wish to call attention to the fact that while the right frontal tumor called forth no localizing symptoms, the left frontal tumor was characterized by pronounced mental disturbance and loss of the capability of writing and printing.

CASE REPORTS.

AUTOPSY.

CASE 1.—Glioma of the Right Frontal Lobe of the Brain. Autopsy. (Abstract.)

Patient.—A carpenter, aged 31, suffered with pain in the

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Glioma of the Right Frontal Lobe of the Brain." Trans. Am. Neurol. Assn., 1897; also, Jour. of Nervous and Mental Disease, February, 1898.

head for two years, accompanied with dizziness and nausea. During the intervals he would be occupied in a pharmacy, copying labels (Fig. 1). The pain becoming more severe and oftener, he was brought to me for examination, September, 1896. Mental faculties were intact, demeanor was normal; optic neuritis was more pronounced in right eye; there was no deviation of tongue; no paresis of any extremity. Diagnosis was made of brain tumor, probably in the right frontal lobe. Death occurred, and autopsy revealed a glioma of the right frontal lobe.

In reporting the case I said: Inasmuch as the left side of the brain, especially the frontal and temporal lobes, contains important centers not present on the right side, may not the centers presiding over reason, memory, intelligence, or the higher psychical states be more localized in the left frontal lobe close to the centers of speech and writing, which are the two great channels through which the intelligence of the being is made manifest to the external world? The close proximity of the centers of speech and the centers presiding over those organs (articulatory) by means of which speech is possible; also the proximity of the centers of writing and those presiding over the movements of the fingers by which writing is possible, might suggest a like proximity of the centers of intelligence, and those centers through which the intelligence of the individual is expressed, namely, of speech and writing; all these are located in the left frontal lobe of the brain.

CASE 2.—Glioma of the Left Frontal Lobe of the Brain; Operation; Removal; Recurrence; Autopsy.

Patient.—J. P., aged 35, farmer, married, was admitted to the Buffalo General Hospital Oct. 10, 1905, suffering with "terrific headaches and some loss of reason."

History.—No reliable or complete family or personal history

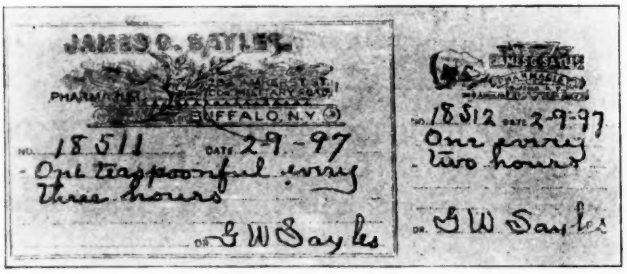
JAMES O. SAYLES
BUFFALO, N.Y.
No. 1851 1 DATE 2-9-97
One teaspoonful every three hours
Dr. G W Sayles
No. 1851 2 DATE 2-9-97
One every two hours
Dr. G W Sayles

Fig. 1.—Case 1. Glioma of second frontal convolution; right hemisphere. Specimens of handwriting.

could be obtained from the patient, on account of his mental dulness and lack of memory, and it was a question whether the State Hospital was not the proper place for his confinement. The following family history was obtained from an old school friend, and the history of the disease from his physician, Dr. McKee, Sugar Grove, Pa.:

Family History: Father died suddenly at 60 from kidney trouble, probably Bright's disease. Mother is living, in fairly good health, but presents a neurotic history. One brother is living, aged about 50, always deaf; is a bachelor and of retiring disposition. Three sisters living; one is married and is subject to epilepsy "heart spells." She has distinct aura and epileptic seizures and has one child with similar attacks. She had one son 22 years old, who died this last summer in an epileptic seizure. He was free from these attacks until 15 years old, when he had some accident. One sister is unmarried, odd, peculiar, not bright; has probably hysteria and epilepsy. The third sister is married, but not much is known about her. Nothing is known of maternal or paternal ancestors.

Personal History: Patient had rubeola and parotitis early, probably scarlatina, without any complications; has had no illness of any importance since childhood. Positively no history of syphilis or gonorrhea is obtainable. Patient has always been of regular habits, not a drinking man, but has smoked considerably for years. There is no history of any injury to head. Patient had a convulsive seizure seven or eight years ago, cause unknown. He was always odd or peculiar, but good-natured; has always been a farmer, was married at 23, had one child 3 years old, and separated from his wife after 5 years. Wife has the child; it is not known if his health has been worse since. His nephew died this summer in an epileptic seizure, and patient's condition has been growing worse.

Present Illness.—This began about nine months ago (January or February, 1905), with intense headaches, marked biliousness and periods of unconsciousness, one spell lasting about 24 hours. He suffered no other pain save the persistent headaches, which continue up to the present time. His appetite was good, even voracious at times. There was no history of nausea or vomiting or of any dizzy spells. There had been no weakness of the extremities. He had been able to walk for miles and has done hard work on the farm for years.

Examination.—This shows a well-nourished, well-built man, weighing about 160 pounds, 5 feet 10 inches in height.

Face: Features were blank, the lines of intelligence were somewhat effaced. Pupils were equal, but reacted sluggishly to light. Movements of orbits were normal. Tongue was heavily coated; no deviation; breath was foul, teeth were in good condition. Uvula hung in median line. No facial asymmetry

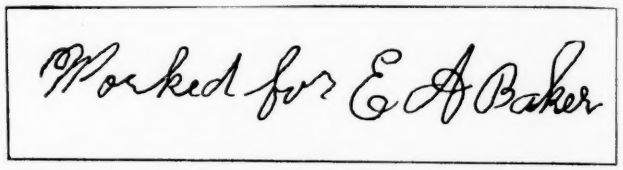

Fig 2.—Case 2. Glioma of second frontal convolution; left hemisphere. Specimen of patient's writing several years before the onset of symptoms.

existed, both sides functionated equally; there was no difficulty in swallowing. Heart and lungs showed nothing abnormal; abdominal organs offered nothing noteworthy.

Extremities: Muscles were fairly well developed; there was no edema of ankles or legs.

Reflexes: Patellar tendon reflex of right leg was normal, that of left slightly exaggerated. No ankle clonus nor Babinski's sign was obtainable; strength of both legs was about equal. There was no disturbance of sensation about legs or body. The gait was somewhat staggering, unsteady, mildly atactic. Speech was slow, measured scanning, as if the words did not come freely. Inquiry into the mental condition failed to reveal any delusions or hallucinations; there existed, however, a mental obtuseness, dulness, with loss of memory, mental confusion, loss of attention, with perseveration and verbigeration. For example, asked when he was born, he replied "1864"; asked when he was married, he replied "1864;" when he

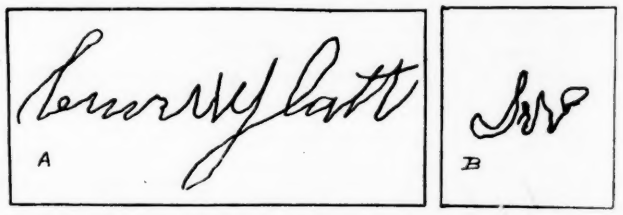

Fig. 3.—Case 2. Before operation. Patient's attempts at (A) writing and (B) printing.

entered the hospital, he replied "1864." It is impossible to convince him of his error in regard to this date. The mental confusion along with the severe headaches, which were frontal, led to a suspicion of brain disease, and an eye examination was made by Dr. Lucien Howe of the hospital staff, who reported:

October, 13, 1905: "Right eye, optic neuritis, first stage; swelling does not extend far into the retina. Hemorrhages are not abundant. Right vision = ½ with atropin + 1.25 diop. sph. vision = ½. Left optic neuritis second stage; swelling extends into retina. Hemorrhages into retina abundant, extending to equator of the globe. Left vision = 1/6 + 1.25 diop. sph. vision = 1/6. Replies of patient are not sufficiently reliable for test of field of vision."

October 14, patient declared that he saw better with the right than with the left eye. Romberg's symptom was slightly present. The right patellar reflex was normal; the left, how-

ever, absent. No difference in the gait was noted. He walked about the ward and by-rooms with the same atactic movements, staggering at times, but prevented from falling. Blood examination showed: Erythrocytes, 6,150,000; leucocytes, 11,500; hemoglobin, 85 per cent. Repeated examinations revealed no abnormal constituents in the urine.

October 22: Patellar reflexes were present on both sides; there was no ankle clonus nor Babinski's sign, and no evidence of any paralysis of the face or extremities. A marked dementia was present.

During the following week no marked change was noted, except that the patient fell to the floor several times. On October 30, I made a careful examination with the following results: Mental condition was approaching a dementia. Head was not specially sensitive to percussion, but was sore, especially over the left frontal region; head was symmetrical; no scars were present on the scalp. Face was regular but expressionless. Facial muscles contracted equally on both sides; tongue was protruded without deviation, the uvula was not deflected; swallowing was not difficult; respiration was regular; there was no disturbance of the senses of taste, smell or hearing, nor of sensation in the face, eyeball, mouth or pharynx. Arms were well developed, equally strong, no evidence of any localized atrophy; grip of hands was good, about equal on both sides. No tremor of the hands was visible; fingers were mobile; there was no atrophy of the thenar, hypothenar eminences or of the interossei muscles. Ophthalmoscopic examination revealed a double optic neuritis, more marked on the left side. There was nothing further abnormal about the eyes. The patient answered all questions slowly, carefully, and with deliberation. He read aloud the words in a newspaper distinctly and named correctly objects shown him. No alexia was present. He said he had always been able to write and print distinctly, and was given a pad and pencil which he took in a natural manner with the right hand (being right-handed)

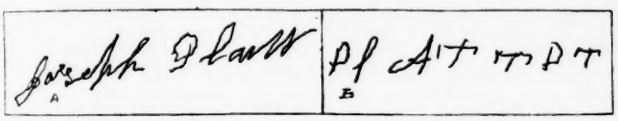

Fig. 4.—Case 2. After operation. Patient's attempts at (A) writing and (B) printing.

and made efforts to write; after some seconds the hand moved without tremor, and after much hesitation and with constant urging, the attempt was made, the last four letters of the word Platt were alone legible; the other letters were merely connected, more or less curved lines. Five minutes were allowed for this attempt. Patient was then asked to print his name, and the result after five minutes' interval was a perfectly illegible tangle of strokes. The patient appeared confused and ill at ease during these trials. He acted as if he knew but could not execute.

Abdominal and cremasteric reflexes were present; there was no loss of power of legs. Gait somewhat atactic, resembled that of cerebellar disease, and has been described by Bruns as due perhaps to a partial or complete interruption of the fibers of the frontocerebellar tract, which brings into association the prefrontal lobe with the opposite cerebellar hemisphere.

Diagnosis.—A brain tumor affecting the left frontal lobe, and especially the first and second convolutions, was the diagnosis made and reported to the house staff. A consultation was held the following day, attended by Drs. Stockton, Cary, Rochester, Long, Putnam and myself. My colleague, Dr. Putnam, and myself strongly urged the necessity of an operation, and steps were taken to secure consent of the relatives. On November 1 he was presented before the College Clinic by Dr. James W. Putnam, who noted the following facts: Right patellar reflex was somewhat sluggish; left, somewhat exaggerated. There was hesitancy of speech of the expulsive type. Patient stated that he was born in 1864, married in 1864, that current year was 1864 and that father and mother both died in 1864 (mother was then living). Dr. Putnam's conclusion was that the patient was afflicted with a tumor of the frontal lobe of the brain.

On November 6, patient was visited by his wife and sisters during the afternoon. When asked at eight o'clock that same night, he said he "did not know who was here," and when questioned specifically, said he did not remember that his wife or sister had been to see him.

Operation.—Consent having been obtained, he was transferred to the surgical ward and placed under the charge of Dr. Roswell Park, whose report follows:

Operation.—Nov. 10, 1905, at Buffalo General Hospital, in clinic, under chloroform, I laid up a large horseshoe flap over the left frontoparietal region, including skin and periosteum. Then, with Doyen instrument, I made four openings, finding the skull very thick and very hard, so much so that it was impracticable to raise a bone flap, even if I had desired. These openings were connected by chisel and, in this way, I exposed an area of dura, irregularly, nearly two inches square. The dura seemed somewhat discolored. Opening it, I came down on a soft tumor, which apparently had not so much displaced the brain substance as involved it, since all around the margin I could distinguish between normal brain tissue and diseased. The growth was soft and vascular, and was connected with the overlying dura by slight adhesions, there being no firm union between them. I began removing this morbid tissue with a large sharp spoon, and by the time it was all removed had made a cavity in the frontal lobe of the size practically of a pullet's egg. With sharp spoon and with scissors I cut away that which seemed diseased and came down to brain which seemed healthy, but there was no abrupt line of demarcation. Hemorrhage was at no time serious and yet oozing was copious. I used adrenalin two or three times and checked

Fig. 5.—Case 2. Glioma of left frontal lobe.

the oozing, and finally put in a tent of gauze which was packed with other gauze slightly sopped in balsam. This was all brought out through the opening on the dependent side of the incision. The dura was closed with secondary sutures, as was also the scalp, the bone between having been entirely removed. During the afternoon, patient required salt solution twice—not that his condition was alarming, but it seemed wise to administer it. Examination of the tumor substance showed it to be a vascular glioma.

Following the operation, the patient seemed to clear up mentally somewhat, so that he answered questions with more responsiveness than before the operation. Headaches disappeared, pupils were normal, strength of arms and legs was good and equal on both sides. There was still a constant repetition of the number 1864 as before the operation.

November 26: General condition was improved; wound externally was nearly healed, but a bulging about the size of a hen's egg was palpated at the site of the previous tumor. (See specimen of writing.)

Dec. 3: The tumor over the site of operation increased steadily in size, pulsated and was soft and fluctuating. A considerable discharge of débris resembling broken down brain substance trickled from the dependent portion of the wound. Temperature was 104; pulse, 100.

December 6: Patient lay in a semi-conscious condition, and did not reply to questions. Temperature was 103; pulse, 100.

December 10: General conditions were rapidly failing; there was profuse discharge from the wound. Patient did not reply to questions; seemed to have some pain. Temperature was 104.5; pulse, 120.

Gradually the symptoms increased, and the patient died on Dec. 15, 1905, of a secondary meningitis.

Autopsy.—This was made the following day by Dr. Nelson G. Russell whose report follows: "Depression about 2 inches in diameter with lower margin about 1¼ inches from median line. Scar of incision about 4 inches long, semi-circular, beginning about 3 inches above and 1 inch anterior to external auditory meatus, extending almost to median line, with discharge of creamy looking material. On removing scalp an opening in skull about 2½ inches in diameter was found; adhesions of dura to scalp; considerable greenish yellow pus. Dura adherent around edges of wound. Surface of brain seemed a little opaque. Considerable purulent exudate at base, extending down the cord. Left frontal lobe showed an irregular, soft mass, about size of hen's egg. Externally, soft and exuding considerable purulent material.

Anatomic Diagnosis: Septic meningitis and tumor of the left frontal lobe."

The tumor consisted of an irregular rounded mass occupying the prefrontal lobe of the left hemisphere, extending laterally from the basal surface of the hemisphere to the precentral convolution. In its cephalocaudal diameters it occupied the whole of the second, or medifrontal convolution and part of the first or superfrontal convolution. It measured 7.5 cm. laterally and 6 cm. in its cephalocaudal diameter. It did not in any way impinge on the third or subfrontal convolution (cap of Broca) nor on the hemisphere of the opposite side. The tumor was dense, firm, the ectal surface roughened with shreds of dural tissue and products of suppuration attached to it. In contrast to the original tumor which was infiltrating, this recurrent tumor was distinctly enucleable with rounded, smooth surfaces from the adjacent healthy brain tissue. (Fig. 5). The other lobes as well as the base of the brain presented no anomalies. The convolutions were distinctly marked and well rounded, the arteries of the base and cortex were not atheromatous and no signs of any previous brain lesions were discoverable. A microscopic examinati n of this secondary or recurrent tumor has not yet been made. The original tumor was a very vascular glioma.

In this case two sets of symptoms are present: First, general, and second, special or localizing, which point decisively to a brain tumor, involving the second frontal convolution of the left hemisphere of the brain. The general symptoms, headache and optic neuritis, in a measure were also localizing, inasmuch as the left frontal region was more sensitive on percussion than the right: although this is not to be considered with too much attention, and existing alone and by itself, would not be of any significance, yet when considered with the other symptoms, it is important.

The early appearance of choked disc and especially the advanced degree of the optic neuritis of the left disc, as compared with the right, is an index of localization well recognized by all workers in brain pathology. Nausea and vomiting and dizziness were not reported or complained of at any time, but a symptom perhaps allied with the vertigo, namely, the atactic gait as pointed out by Bruns existing in frontal lobe tumors, was a noticeable feature in this case. The ataxia and unsteadiness became so intense that the patient repeatedly fell to the floor and was eventually restrained in bed.

The localizing symptoms were very manifest. The existence of mental apathy and severe headaches, were the symptoms which brought the patient to the hospital. The mental apathy resembled a mild type of acute dementia without delusions or hallucinations. Perseveration and verbigeration were present throughout his stay at the hospital both before and after the operation, and are well recognized symptoms of mental hebetude. Loss of memory, of ideation and the lack of expression of the face, were features pointing to mental involvement, more pronounced than the ordinary mental symptoms generally present in brain tumors wherever situated. There was no distinctive aphasic condition. The speech was slow, hesitative, somewhat scanning—not due to any disturbance of the motor speech center, but to the mental sluggishness. A very important symptom, and one which makes the case almost the counterpart of the one reported by Herman C. Gordinier of Troy, in which a localizing center for writing was not only assumed but accepted in the second frontal convolution of the left hemisphere, was the agraphia[2] which was present both for writing and printing, but more marked for printing, before operation. After the removal of the tumor, the agraphia partially subsided, although a goodly portion of the base of the second frontal convolution was excised at the operation—whether transference to the right side, as in cases of aphasia, with injury to the third left frontal convolution took place, must remain conjectural.

At no time was there any paralytic condition of the right arm, hand or fingers, or any localized epilepsy of these parts. The condition of the patellar tendon reflexes varied somewhat, but there was no persistent exaggeration, ankle clonus or Babinski's sign. Compared with the tumor of the right frontal lobe, it differed in two important particulars: First, in regard to the mental condition; second, in regard to the condition of agraphia.

I. MENTAL CONDITION.

The interest attached to cerebral localization has been absorbing to a large number of investigators, each of whom has labored faithfully to map out some particular field as the center of some special function. To Gall, and later to Spurzheim, much credit is due for their efforts to connect function with brain development. Gall succeeded to his own satisfaction in labelling the regions of the brain with the names of the habits or actions he found associated with the development of the special parts, Spurzheim labored for a more abstract conception of the functions of the cerebral areas, and declared that Gall studied merely the abuses of the mental faculties; thus phrenology, a much-abused but useful science, became the forerunner of the modern conception of brain localization. The point of departure or the leave-taking of the two, however, was most abrupt. The former regarded external contour only in its relation to underlying attributes, or the exposition of character by the development of the brain and skull; the latter sought by experimental researches and clinico-pathologic deductions to connect certain areas of the brain cortex with physical and psychic activities and functions inherent in all, according to the scale of development and special aptitude of the organism under observation. The regions of the brain presiding over the psychic functions have been gradually narrowed down by exclusion, to the prefrontal and the occipital lobes. The cerebellum was early excluded, and all observers from the days of Willis and Flourens are practically agreed that the cerebellum plays no part whatever over the mind, instinct, intelligence, sensibility or special senses; these functions belong to the cerebrum alone, and remain unaffected even in the most severe of cerebellar affections.

Tumors located in the cerebrum call forth certain peculiar mental symptoms, which are common to all lobes with the possible exception of the prefrontal, and

2. Am. Jour. Med. Sci., September, 1903 and May, 1899.

here these symptoms in many cases appear to be accentuated. Mendel[3] describes these symptoms as follows:

1. Hallucinations, appearing at different times and quickly disappearing, sometimes connected with the localization of the tumor (visual hallucinations in tumors of the occipital lobe, etc.), and are often recognized as deceptions.

2. The diminution of intelligence and of memory, often expressed as a certain laziness and indolence, easy forgetting, a certain stupidity with a peculiar blank expression of the countenance. Sometimes a silly, foolish state, moria, appears.

3. A certain yielding disposition, facile irritability, laughing, weeping.

Perfected clinical types with massive hallucinations, with melancholic or paranoic delusions, epileptoid twilight states are rare; oftener there is progressive dementia, especially when there are multiple foci. As a rule, the psychic disturbances of brain tumors are distinguished by being generally connected with considerable feeling of disease and by the appearance of more or less clearness in the intervals between the attacks, in cases in which delusions and sense deceptions are abundantly produced. A local diagnosis cannot be made from the psychic disease unless it may be said in general that focal diseases of the frontal lobes very frequently call forth psychic alterations.

Broca was the first definitely to establish a constant relation of a special center to a special function, and the cap of Broca, or the base of the third left frontal convolution, is synonymous with motor speech. Hughlings Jackson asserted that limited areas of cortex would be found to preside over special organs, and that the destruction of these areas would result in loss of the corresponding function. Soon thereafter Fritsch and Hitzig demonstrated the centers for voluntary motion, and exempted the region about the central or Rolandic fissures from participation in the purely intellectual functions of the mind. Charcot and the School of the Saltpêtrière; the English school, led by Ferrier, Horsley, Beevor, Semon, Schäfer and others; the German school, with Wundt, Munk and Goltz at the head, further exempted the parietal, temporal, sphenoidal, and probably the whole of the occipital lobes. The field then has been narrowed down to the prefrontal lobes as the seat of the intellect. This theory, advocated early by Wundt, has been accepted for many years, and has been borne out by anthropologic research, by clinical pathology, by comparative anatomy, and by physiologic deductions. Of late years, the limitation of the intellectual faculties of the mind to the left prefrontal lobe has been argued; among others, by myself in 1897;[1] by Charles Phelps[4] in 1902; by Charles W. Burr[5] in 1903; and by Mills and Weisenburg[6] in 1906.

Phelps made a very careful review of the work done by observers in this field, beginning with Bouillaud in 1825, citing many cases of others, and reports in detail 18 additional cases to those already published by him in which traumatic or pathologic lesions of the frontal lobes resulted in varying phases of mental derangement. Seeing that the posterior portions of the frontal lobes are known to control special motor functions, mental control becomes localized to the prefrontal region, while the conclusions from previous investigations point to the seat of such control as being in the prefrontal region of the left lobe rather than the right. Also laceration of the left frontal lobe appears to be the only traumatic lesion occasioning direct loss or derangement of intellectual function, and the deeper the laceration the more mental default preponderates over mental aberration; while in recovering cases, in which the lesion may be regarded as irritant rather than destructive, mental aberration is more frequently noted than mental default. Three cases reported by other observers are quoted in which extensive destruction of the right frontal lobe occurred without alteration of the mental faculties, while the famous "crowbar case," in which the lesion was in the left prefrontal region, and a case reported by Obici and Tambroni of glioma of the left prefrontal lobe, are referred to as showing mental disturbance. In every instance but two out of 295 cases, in which the history was verified by necropsy, extensive laceration of the prefrontal region of the left frontal lobe was characterized by abrogation of mental power, while more superficial injury manifested itself by mental aberration.

By the study of these cases Phelps feels justified to present three propositions: 1. The more absolutely the lesion is limited to the left prefrontal lobe, the more positive and distinctive are the symptoms of mental default. 2. The integrity of the mental faculties remains unimpaired in right frontal lesion, though it involves the destruction of the entire lobe, or even extends to the entire hemisphere. 3. The exceptional instances in which seemingly opposite conditions exist, are always reconcilable on more careful examination, with the assertion of an exclusive control of the mental faculties residing in the prefrontal region of the left side. He says:

> If, then, the same nature and degree of proof which is deemed sufficient for the localization of other cerebral functions, may be accepted in case of the mental faculties, their center of control has been established.

After a critical review of the subject and the study of a case of unusual interest because of the strict limitation of the lesion to the prefrontal lobe, Mills and Weisenburg say:

> We hold to the view that the highest mental faculties or functions have their material representation in the prefrontal lobes of the brain, and especially in the left prefrontal lobe.

In fifty cases of tumor of the prefrontal area analyzed by Williamson,[7] the mental symptoms were generally well marked, and in many cases were the most prominent and earliest symptoms. His results are as follows: There was a condition of mental decadence with a dull mental state, a loss of power of attention, a loss of memory, a loss of spontaneity; the patient took no notice of his surroundings and slept during the greater portion of the day, or was semi-comatose in thirty-two of the cases. There was loss of memory, mental failure, but the patient was cheerful in six cases. The patient was suspicious and suffered from delusions, which were occasionally violent in one case. The patient was irritable and violent in one case. The patient was generally asleep, and irritable when awake in two cases. The patient was ambitious, excitable, and had loss of memory in one case. There was slowness of mental processes, and the patient was simple and childish in one case. There were mental anxiety, childishness, hallucinations, suicidal tendencies in one case. The mental condition was not stated in five

3. Text-book of Psychiatry (Translation by Krauss).
4. Am. Jour. Med. Sci., April and May, 1902.
5. Philadelphia Med. Jour., Jan. 31, 1903.
6. THE JOURNAL A. M. A., Feb. 3, 1906.
7. Brain, 1896, p. 346.

cases. Seventeen of these lesions involved the right lobe, twenty-two the left, and eleven both lobes.

Ferrier[8] states the symptoms of disease of the frontal lobes as follows: Mental inactivity, forgetfulness, lack of judgment, decided change in character, irritability of temper and unusual stupidity, an inability to concentrate the attention, to think connectedly and continuously, to learn easily, to exercise self-control, and lastly, a state approaching mild dementia without delusions, in which the patient may become dirty and disregard all restraints of decency.

Naturally some opposition has developed to this localization of the intellectual faculties. In 1902 Müller[9] and Schuster,[10] and in 1904 von Monakow[11] each dissented from the view that the prefrontal lobes are more interested in mental activity than other parts of the brain, and that tumors situated in this area need not cause disturbance of the higher psychic function. Mills and Weisenburg[6] claim that clear distinctions are not made as to the character of the psychic disturbances caused by tumors located in various parts of the brain. The chief sources of fallacy would seem to be: 1, that sufficient stress is not laid on the fact that owing to the painful and exhausting character of brain tumors, mental disturbances in the broad sense may occur because of the irritation and exhaustion produced by these lesions; 2, it is not clearly brought out that tumors of the posterior association area or concrete memory field of the brain will necessarily cause some disturbances of mentality, especially those in the domain of orientation and in the sensorial field; 3, that tumors anywhere situated may cause mental disorders simply through the disturbance or impairment of association which must result; 4, sufficiently close attention is not paid to the particular point that the psychic disorders caused by prefrontal tumors are especially those of the higher intellectual functions, and that in many of the cases studied the normal mental status of the individual is not properly taken into account; and, 5, the fact is not recognized that in tumors situated in one of the prefrontal regions, especially in the right, the individual's intellectual faculties may be largely preserved because of the integrity of the corresponding region of the other side.

The argument has been advanced that inasmuch as insanity is a disease of the mind, it must therefore be limited exclusively to the prefrontal lobe of the left hemisphere, if this theory be correct. But the mind is the sum total of the faculties and functions of the brain cortex; therefore, insanity must be considered a diffuse disease of the brain cortex with special exaggerated phenomena due to irritation of the different cortical centers, as e. g., the optic center, the auditory center, or motor centers, thereby calling forth the special function of these centers as visual hallucinations, auditory hallucinations, motor unrest and the like. Although the pathology of the functional psychoses is still undecided and unsettled, there are organic brain diseases producing grave mental disturbances which have a definite and constant pathology, and among these none is better known and understood than paresis. The symptomatology of this disease is a typical decadence of the intellectual faculties, terminating in a profound dementia or even amentia. The lesion in paresis, as determined by the investigations of Mendel, Mott, Mickle and others, is situated exclusively in the frontal lobes and the left is more affected than the right. In speaking of the pathology of paresis Mendel says:

The weight of the brain in paretics is generally diminished, and as a rule, the right hemisphere weighs more than the left.

Of late there has been some trend of opinion favoring the posterior or occipital lobes of the brain as being those chiefly involved with the higher mental processes. This view is based on the following claims: First, as Gratiolet pointed out, the posterior lobes are of later development in the individual man, and thus it is inferred they are the least needed for the purely animal functions;[12] second, they are proportionately more developed in man than in the lower animals, and they exist only in the higher vertebrates; third, in intellectually lower races the posterior lobes have been observed to be proportionately smaller; in some of the bushmen they fail to cover the cerebellum; fourth, in some of the lowest mental grades within the lines of civilization, the posterior lobes are the smallest, especially so among idiots.

That the occipital lobes are concerned in the higher psychic activities is the opinion of many of the English investigators. For instance, Bevan Lewis[13] says:

I have repeatedly observed in cases of senile insanity, with excessive wasting of these regions, such as results in a peculiarly pointed frontal lobe, an association during life of extreme torpor and somnolence.

He further says:

There are cases in which, as Hughlings Jackson teaches, profound dementia accompanies lesions of the posterior parts of the brain, confirming the observation of Rosenthal, that the psychic disturbances resulting from tumors in the posterior lobes are far more frequent than from corresponding growths in the anterior and middle lobes.

Professor Carpenter, Bastian, Schäfer and others contend that the posterior lobes are the most important parts of the brain for intellectual purposes.

In the majority of instances animal experimentation has favored the frontal lobes as the seat of habits or tricks taught them, or perhaps we may say instinct.

Very recently Mr. Shepherd Ivory Franz[14] has published some very interesting experiments on cats from the physiologic laboratory of the Harvard Medical School. He taught the animals simple habits and then cut away portions of the brain. His conclusions are:

1. After a bilateral lesion in the frontal lobes the habits are lost. 2. The effect can not be explained as due to "shock," for other brain lesions are not followed by loss of habits. 3. Unilateral lesions of the frontal areas are usually followed by a partial loss, or, rather, a slowing of the association process. 4. Habits once lost after removal of the frontal lobes may be regained. After a second operation they are again lost, and may be regained a second time. 5. Only newly formed habits are lost after such lesions. Inherited and long standing habits seem to be retained. 6. The emotional condition of the animal is practically the same after as before the operation.

It is generally conceded, however, that the frontal lobes alone are an index to a person's intellect, and their mass has to be judged by all the measurements which are used for the estimation of the size of the body; that the head may be small in a person of wisdom, provided frontal lobes are relatively the most prominent.—(Hollander.)

From a careful observation and intimate knowledge of the illness of the two patients whose histories I have presented, and without reiterating, but simply emphasizing the argument made in 1897 anent the contiguity of the

8. Quoted from Starr, Dercum's "System of Nervous Diseases."
9. Deutsch. Ztschr. f. Nervenhlk., 1902, xxi 3 and 4.
10. "Psychische Störungen bei Hirntumoren," Stuttgart, 1902.
11. Ergebnisse der Physiologie, III No. 2, 1904.
12. In apes, however, they are the first to develop.
13. Brit. Med. Jour., Sept. 29, 1883.
14. Am. Jour Physiol., Oct. 1, 1902.

centers of the intellectual faculties, and the articulatory and motor centers of the right hand, and wedged between these the centers of speech and writing, all located in the frontal lobe of the left hemisphere, it is only logical, therefore, to assume that the center of the intellectual faculties is here located, and I believe that future clinico-pathologic studies and results of animal experimentation will confirm this view.

It would be an interesting clinical fact to prove whether in left-handed individuals this center would be found in the right prefrontal lobe, the same as we assume that the center of speech is there located in left-handed individuals, and whether in slowly progressing disease of the left frontal lobe it will be possible for the right lobes to take on the functions which we are trying to make the left frontal lobe possess. These are interesting clinical questions, and no doubt will be as conclusively solved some day, as was Broca's theory regarding the center of motor speech.

II. AGRAPHIA.

In the exhibit of handwriting, the patient suffering from glioma of the right frontal lobe (Case 1) was able to write distinctly, correctly and legibly. The labels which he copied the day previous to his death are models of penmanship and intelligence, and I doubt not but that they are more legible than the physician's prescriptions which served as the copy (Fig. 1).

In the patient suffering with glioma of the left frontal lobe (Case 2) the attempt at writing before the operation resulted in a series of connected, ill-formed lines, with only the last four letters of his name legible; while in attempting to print his name it ended in an absolute impossibility. Five minutes were allowed him for each attempt. After the operation some improvement was noted in writing; although crude and irregular, it is possible to read the same. In printing he has recovered the shape and form of the letters, and although repeating some, which may be a mental difficulty, the same is also legible (Figs. 2, 3 and 4). The literature on this subject has been carefully scrutinized of late by Dr. Gordinier of Troy, N. Y., and it is unnecessary to repeat what he has so well written. This case seems to help to prove the existence of a writing and printing center in the base of the second frontal convolution of the left hemisphere, in close proximity to the center of the right hand, through which writing is ordinarily made possible.

CONCLUSIONS.

1. The prefrontal lobe of the left hemisphere is in all probability the seat of memory, reason, intuition and judgment or the higher intellectual faculties.

2. A distinct center for writing and printing exists in the base of the second frontal convolution of the left hemisphere.

FOR THE DISCUSSION, SEE PAGE 359.

Effect of Posture on Kidney Functioning.—Some recent experiments by Jaques are related in the *Province méd.*, No. 35, 1906, which show that kidneys enfeebled by disease functionate differently as the patient stands or reclines. It is important to examine the urine after the patient has been standing or walking and again after he has been reclining. In 14 out of 15 nephritic patients the amount of urine increased to three times its former amount as the patients reclined, and the elimination of urea and of chlorids was increased in 14, and of the phosphates in 5. In 9 patients the proportion of albumin in the urine also subsided to a marked extent. As convalescence progresses the difference between the urine of the various postures becomes less and less pronounced.

SOME WAYS TO PREVENT THE SPREAD OF TUBERCULOSIS.*

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At present, the importance of this subject is sufficiently recognized as to require no discussion in a paper before a body like this. The literature of the subject is so great and the time at our disposal so short that no attempt at completeness of review is justifiable. Especially, it is impossible within the time limit to present any statistical study or to give the data on which our opinions may be founded. Therefore, I shall briefly discuss some features of the following three topics:

1. The direct reduction of the opportunities for infection.

2. The promotion of the individual powers of resistance.

3. Educational influences at our disposal.

REDUCTION OF OPPORTUNITIES FOR INFECTION.

The tubercle bacillus is now almost unanimously accepted as the efficient and the specific cause of tuberculosis. The few dissenters from this accepted view may be ranked with those championing the antivaccination fight and the antivivisection fanaticism—individuals whose training in both logic and the biologic sciences is so deficient as to deprive their utterances of all weight of authority.

It is not here necessary to enter into any discussion of the biologic characteristics of the tubercle bacillus, its pathogenetic properties, and the anatomic results of infection with it. It may be assumed that we are all sufficiently familiar with them for the purposes of this paper.

The antituberculosis propaganda to-day is very largely a war against the tubercle bacillus, efforts being devoted to its destruction and to the reduction of opportunities for infection with it. The success of the plan as adopted in New York City and in some other cities, the former being the most notable—with the general principles of which it may also be assumed we are all familiar—has been so striking that it may now be fairly questioned whether any community is justified in further hesitation in putting it into operation. Beginning with a tentative request for voluntary notification, it now includes compulsory notification of all cases of tuberculosis and the coöperation of the board of health with the physician whenever this is desired in matters of diagnosis, education, supervision and care, not only of the patient, but also of his family, and the improvement of his surroundings.

The opening wedge is the question of notification. In many communities, professional opinion will not support compulsory notification. Of course, without this support any attempt at compulsory notification will be a failure. The experience of New York, however, demonstrates that a short period of voluntary notification may be shortly followed by compulsory notification with practically the unanimous commendation of the medical profession. In every community, therefore, the consensus of professional opinion should be obtained and that form of notification receiving its approval promptly put into operation. Notification alone, however, ac-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

complishes nothing except the accumulation of statistical material, and to be of any benefit, must be accompanied with the other measures which are its legitimate outgrowth.

The question of isolation of the tuberculous patient has been the subject of considerable difference of opinion. To-day it may be accepted as an established dictum that the consumptive is not necessarily a source of danger to others, but he may become a pest and a plague if he is either ignorant or vicious. If he is careful of his sputum there is no occasion for his isolation, and the enforced partial isolation, due to the phthisiophobia now rather wide-spread, is a cruelty and a hardship to the sick without being a protection to the well.

It is different, however, if the patient scatters his bacillus-laden sputum indiscriminately, either because of the debility due to the advanced stage of his illness, or to ignorance, carelessness, or that form of viciousness which leads its possessor to have no regard for the welfare of his fellow men. In such cases it is proper for the state to intervene and to place the patient in such hospital or detention institution surroundings that the opportunities for increasing the danger to himself or to others shall be reduced to the lowest possible minimum.

It is not too much to say that wherever practical, patients should be advised to seek sanitarium treatment. I can not refrain from adding my testimony to the mass of evidence already accumulated in its favor. My experience, fortified by my seven years' connection with the National Jewish Hospital for Consumptives in Denver, is that we obtain better results, as a rule, in sanitarium practice than we can in private practice. This is largely due to the absolute regulation—call it arbitrary, if you will—of the patient's daily conduct. So much for the patient. For the people, the sanitarium exercises a very great influence as an educational institution. Not only does the patient learn how to conduct himself for his own benefit and the protection of his neighbors, but when he leaves the institution, its teachings are spread among all with whom he comes in contact.

Of great potential value are the tuberculosis hospitals and dispensaries. These, in addition to the care of the sick, form centers from which the lines of battle against the spread of the disease radiate. In addition to the medicinal and dietetic treatment, the instruction to the patient and his family by word of mouth of the physician, by judicious circulars, by the ministrations of visiting nurses, by the investigations of medical inspectors, may be very prolific of benefit, as is evidenced by the experience along these lines of New York, Cincinnati, Baltimore, and many other cities.

Among the poor, and they furnish the greater number of victims to tuberculosis, the family and children's clinic meets a growing necessity. Every member of a consumptive's household should be examined at intervals for evidence of infection—every member should be regarded as an object of suspicion. In the few municipalities in which such work has been systematically attempted, it has been shown that tuberculosis much more frequently makes multiple appearances in the family than is generally suspected. My own case records show not a few instances in which husband and wife or parents and children have been so affected.

Too great stress can not be laid on the subject of disinfection of quarters which have been occupied by consumptives. Nearly every one acquiesces in the contention that rooms in which consumptives have died and in which one in the later stages of the disease has lived for some time should be fumigated, and the laity generally have a not unnatural prejudice against occupying such rooms. It is not the fact of the death, however, nor the advanced stage of the disease, which is the potent factor. It is the contamination by the sputum. We do not know that the tubercle bacilli have any increase in virulence as the victim's strength wanes or become so much more numerous as to make that a matter of any great importance; we do know, however, that patients whether in the higher or the lower classes, may be careless with their sputum.

I have seen dried sputum on wall paper months after it has been deposited. I have seen newspapers tacked or pinned against the wall near the bedside for the patient to expectorate on without having to exert himself, and the copious, yellow, purulent sputum running down and dropping on the floor, there to form pools and gradually to dry. I have seen in hotels and lodging houses people by no means of the lower, or ignorant, or vicious classes, as generally estimated, expectorate on the carpets, careless because these were property of some one else, and without a thought of the possibility of danger to themselves or to any one else. Such being the case, the disinfection of rooms in hotels and lodging houses should be required by ordinance, and prospective tenants should, as a routine matter, require the same from landlords.

In all cities the dust menace is no slight one. The pavements and streets are the receptacles for sputum from untold numbers of consumptives, as well as those healthy or suffering from some other disease, and for offal of various kinds. This matter lies for days and becomes dry and pulverized, to be raised by every breath of air and inhaled without cessation by the helpless passer-by. In the country, this is of minor importance because the sources of contamination are so few comparatively and the intervals so great that sunshine and air are able to complete their task of disinfection. Not so in the city, however. Here the danger is a constant and an increasing one. Not a few epidemics of acute disorders of the respiratory tract have been traced to such causes and it is not unreasonable to assume that many cases of tuberculous infection are due to the same etiologic factor. It behooves every municipality, therefore, to investigate carefully and to apply the means of lessening this evil to a minimum.

I purposely omit any discussion of the subject of the possible transmission of tuberculosis through the ingestion of milk or meat from tuberculous cattle.

INDIVIDUAL POWER OF RESISTANCE.

Inasmuch as the tubercle bacillus is practically ubiquitous we can not expect the crusade for its destruction ever to be absolutely successful. Although we recognize to the fullest extent that the tubercle bacillus is the sole and only exciting cause of tuberculosis, it does not follow that if every tubercle bacillus in existence at any definite period of time were absolutely destroyed the disease which we recognize to-day as tuberculosis would thereon necessarily vanish from the face of the earth never again to reappear. While we do not at present believe in a *generatio de novo* in the sense contended for before the days of modern bacteriology, and while we do not believe in a special creation of each species which might be repeated, all those who accept the doctrine of evolution must accept the possibilities implied in that doctrine. The tubercle bacillus is closely allied to certain other micro-organisms for which no pathogenetic properties have as yet been determined. We can not definitely

exclude the possibility that it has been evolved from some of them, or the possibility that fresh and independent strains of tubercle bacilli are to-day, under favorable circumstances, being so evolved from them, or will in the future continue to be so produced. Some peculiar idiocyncrasy or predisposition of an individual host may be necessary for such evolution, but who can doubt that, with the infinite variations existing in the individuals of the species, such condition of special adaptability of the host may and does repeatedly occur.

Such being the case, and the absolute destruction of this germ not being feasible, it is, indeed, fortunate for the human race that the question whether an individual will contract the disease or not is a matter of relative dosage—it depends on whether or not the seed will fall on a suitable soil and in sufficient quantities to produce a crop.

In view of such a fact we can readily see the necessity for turning our attention to the strengthening of the powers of resistance inherent in the individual, as well as to attempting as widespread a limitation of the opportunities of infection as possible. I desire to lay special stress on this subject in this paper because in the past, in the endeavor to prevent the dissemination of the tubercle bacillus, there has been a marked tendency to overlook this subject and to allow it to sink into obscurity.

In this field, the physician has practically an unending duty before him. Before any impress of effectual character can possibly be made on the population in general, the medical profession must be thoroughly saturated with the subject. The physician must recognize the necessity for increasing his own knowledge of all the varied causes predisposing to the disease. He must acquire for himself a greater familiarity with those indications which in early life, even years before the onset of any symptoms of the disease, point out the probability of the individual contracting tuberculosis. He must give much more attention to prognostic diagnosis of the at present healthy individual than he has in the past and must cultivate a greater acuity in the recognition of what may be called the pretuberculous or early tuberculous stigmata—those peculiarities of physical growth and development which indicate a tuberculous predisposition or diathesis. Then, and only then, will he be prepared to be a teacher of the people who will not be without influence.

The strengthening of the constitutional powers of resistance implies the employment of all the possible resources of public, general, and personal hygiene. The discussion of such subjects in general, without individual personal application, usually passes over the heads of the people without making the impress the subject deserves. When, however, the physician can say to individual members of his clientele, in the privacy and with the emphasis of a personal conversation: "You, or such and such a member of your family are more apt than others to contract tuberculosis, because ancestry, family history, or physical configuration indicates a distinct lack of diminution of the natural powers of resistance," and is able to point out to him the stigmata on which he is able to base such conclusion, he has at once an interested hearer, and is more apt to be able to accomplish the carrying out of a proper hygiene. The *argumentum ad hominem* is an effectual one.

As stated, the strengthening of the constitutional powers of resistance calls for the marshalling of all hygienic resources—the proper regulation of public and private life, public and private sanitation, regulation of the daily conduct, exercise, the securing of an abundance of fresh air, sunshine, sleep, etc. The consideration of each of these subjects individually, I do not care to enter into at this time, but I do wish to lay particular stress on two of them—the dietary and the condition of the home and the workshop.

The present day in educational fields may well be designated as the elective era. The courses offered in our high schools as well as in our higher institutions of learning, present a bewildering array of elective studies. Even our grade schools are not entirely free from this. No matter what field of life the developing citizen is expected to occupy, the pupil would seem to be supposed to have a better knowledge than the instructors, individually or collectively, of what will best satisfy the needs of his future career.

To a certain extent, also, is this anomalous condition carried into the walks of our daily and still younger life. The modern education of the child would appear to be largely a yielding to its inclinations and a submission to its whims. Obedience is not to be exacted and punishment, no matter how temperate nor how much deserved, must not, under any considerations, be inflicted for infractions of the rules of civilized life or even for moral shortcomings.

Diet.—In the matter of diet, which specially concerns us here, the doctrine is rapidly growing among the laity, that the child's likes and dislikes should determine what its food should be; that the individual will have a desire for what is good for it; and that what one dislikes will not be of any benefit. There is a tendency for the average modern mother not to attempt to discover whether a dislike is founded on an actual incompatibility between the special individual and a special article of diet (i. e., a personal and physical idiosyncrasy) or an acquired repugnance due to purely accidental circumstances or even to a fancied distaste which may have originated from a mere whim of the child or may have been the simple result of suggestion more or less often repeated. In either case, "the poor dear" must not be forced to eat that which it does not want to eat, no matter how wholesome the article of diet may be and no matter how marked may be the indications of its need in the given individual.

As a result of this mistaken idea as to physical education, we have growing up an increasing number of individuals of finicky dispositions and perverted tastes. How often among our tuberculous patients do we meet patients who say: "Doctor, I just can not drink milk," or: "Doctor, I can not bear to look at an egg, and I can not touch meat!" In a great majority of such cases, careful investigation will reveal that this is the result of a defective dietetic régime and education in early childhood, the period of life which really offers the least difficulties in the matter of establishing correct and reasonable tastes. As is well known, it is not difficult to get children to take with relish foods and medicines which would cause some hesitation, to say the least, on the part of an adult. It is also not difficult to start and to establish in them, as the result, simply, of repeated suggestions, an at first fictitious, but later confirmed and real repugnance which later can never be overcome and which, in the case of certain diseased conditions, may be a detriment of no mean importance, or which, in itself, may predispose to the establishment of certain pathologic affections.

These facts are what render this subject of importance to us. Every physician who has an at all extensive practice among the tuberculous, knows that it is just these

finicky patients who present to him the greatest difficulties in the conduct of their cases. It may not have attracted his attention, but a little investigation will convince him of the truth of the fact, as well as of its importance, that these very finicky individuals—finicky as to diet—form a very considerable proportion of our consumptive invalids, perhaps a larger proportion than is the case with any other diseases, and certainly a much larger proportion than exists among the populace in general.

We all recognize the fact that diet and the tolerance of a proper diet are of the utmost importance in the treatment of tuberculous invalids. From the foregoing it would appear that a proper diet throughout life is also of the utmost importance in the prevention of the disease.

A proper diet, as a little investigation will show, means not only a sufficiency as to quantity, but also a sufficiency as to diversity. It is the patient who can eat everything who stands a good chance of getting well. So too, it is the individual whose diet for years has been a perverse one, who could not eat meat, to whom eggs were distasteful, who could not stand milk, who was infected with the vegetarian or the two-meal-a-day fad, or some other as unfortunate delusion, who stands a good chance of becoming ill of tuberculosis. It behooves us as physicians, therefore, to let our influence be steadfastly felt in opposition to defective dietetic education.

Not less important than the kind and amount of food necessary for the preservation of the health of the people is the matter of the manner of its preparation. It has more than once been forcibly shown that the existence of so very few good cooks among the lower classes has a powerful influence in the development of intemperance so prevalent in the same circles. With equal force it may be argued that this same fact has the same influence in the production of a predisposition to tuberculosis. Poverty and filth seem to be inseparably connected. It can not be expected that the slattern will be a good cook. The greasy frying pan is but a symbol of the entire practice of cookery in the family in which it exists, and is always associated with dyspepsia, malnutrition, and the whole host of physical ailments, not the least of which is tuberculosis, connected therewith.

Tenement Houses.—During many years much has been added to the literature concerning the tenement house and its necessarily concomitant evils, socials, moral and physical. To-day it may be accepted as an incontrovertible fact that tuberculosis is essentially a house disease. It is associated with the home and the workshop. In our larger cities the tenement house becomes a most important factor in the propagation of this disease. Much has been written on this subject and too much can not be written until these evils have been reduced to the utmost possible minimum. I simply mention this subject so that, through very familiarity with it, we may not be tempted to overlook it, and thus to overlook one of the most potent elements in the propagation of the disease in question. In all cities in which the tenement exists, tenement regulation must not be allowed to become a dead issue. The building regulations must be such as to insure the maximum feasible amount of comfort to the individual and the maximum provision for the physical hygiene of the occupant. In this is included, of course, provision for securing a maximum amount of sunshine and ventilation not subject to the whim of the individual. (In the matter of sunshine, it might be suggested that the almost universal custom of having the streets run in the direction of the cardinal points of the compass is an unfortunate one. If the directions were diagonal to these, as is the case with the down-town streets of Denver, this would insure the possibility of the access of sunshine to every outside room of every building, no matter on which side of the street located, unless overshadowed by some extraneous object, such as an adjacent building.)

Those inhabiting cities in which the large tenement house does not exist to any considerable extent may fall into the error of thinking that the tenement evil does not exist for them. A little observation will show that what may be called "tenementism in the small home" is also omnipresent. In all towns in which poverty exists—and where is the one from which it is absent?—there is a certain tendency for the poorer classes to crowd together in the older, smaller, and least hygienic, and least favorably situated houses. The smaller tradesmen will have their homes in the rear of their stores. Too often we find these latter to be deep, narrow, low-ceiled rooms on the first floor, without windows on the sides, the only possibility for ventilation existing in a single front door, a back door, and possibly a single window in the rear wall, which usually abuts the alley and is overshadowed by a similar wall just opposite. Across the middle of the room, to separate the store from the living apartment, is built a partition reaching within a few feet of the ceiling. With such limited opportunities for ventilation and the usually total absence of sunshine from the living rooms, who can wonder that the members of the family present the typical appearance of the typical tenement-house inhabitant!

Let us add to this that in these store-homes, as well as in the smaller houses frequented by the poor, there is the dangerous practice of overcrowding. We can readily find in these, just as well as in the large tenement house, from six to ten people sleeping in one room having ventilation accommodations for not more than two or three. This being the case there is little wonder that all the evils of the tenement house may flourish in communities in which no tenement house exists.

Workshop.—The workshop is another of the places to which tuberculosis clings. It is a well recognized fact that certain trades or kinds of work furnish an unusually large quota of tuberculous victims. In some cases this is true regardless of surroundings of or the character of building in which this work is carried on. In many other instances, however, they are the trades which are carried on in the so-called "sweat-shops," the trade itself not being intrinsically unhealthy. Allow a tuberculous workman to be employed in one of these for a short time, careless as to his habits, and a focus of infection is established from which a crop of victims is inevitable.

These facts are so well established that they need but to be mentioned to bear with them the suggestions for their correction. The tenement inspection laws should be extended to the small home, at least in such cases in which tuberculosis has made its appearance. Tenement inspection laws and factory inspection laws should be so exact and their execution so efficient that little opportunity may be left for self injury through ignorance, or danger to others through ignorance, carelessness, or wilful neglect.

Disinfection of Premises Before Renting.—It has been suggested that for prospective tenants to demand from the agent or owner what has been termed "a clean bill of health" for the house sought to be rented; i.e., a certificate from proper authorities that no case of infectious disease has existed in the house, or that the latter had

been efficiently disinfected since vacated by the last tenant, would greatly diminish the number of cases of tuberculosis acquired by house infection. This is undoubtedly true, and more emphasis might be laid on this element of the propaganda of education of the people. If the demand for clean bills of health were to become a popular habit, landlords would be compelled to furnish them in self defense. It may also be suggested that such be made mandatory in the case of tenement houses, the tenement-like home, and the workshop. If such were universally required regardless of the health-character of previous tenant or employé, no hardship would be worked on the sick. Otherwise, however, it would become more and more difficult for the tuberculous patient to secure quarters for himself, and to the landlord the consumptive would become more a *persona non grata* than the most unruly of children.

Preservation of the Child.—Of preventive inoculation or vaccinative procedures against tuberculosis, not more than simple mention need to be made now. The data at our disposal at the present time are entirely too few to justify a conclusion of any sort, either favorable or unfavorable, as regards the possibilities of accomplishment in this direction.

The preservation of the child against tuberculosis, especially in the presence of tuberculosis in other members of the family, is no slight task. The susceptibility is greater in earlier years, therefore, the necessity for greater care in the home. The tuberculous mother should be taught the dangers of nursing her infant, or of testing its food by tasting. The danger from creeping on the floor should be emphasized. The necessity for improved hygiene in the matter of food, ventilation and outdoor life should be dwelt on.

In this connection, the problem of child-labor naturally arises. My own position is that no child of tender years should be compelled to enter into the struggle for existence. Should this not seem to others to be unqualifiedly tenable, it may at least be maintained as incontrovertible that the character of the tasks which may be imposed on the child should be carefully scrutinized, those forms of work which may be shown to be physically injurious should be absolutely prohibited, and the hours of such labor as may be permitted most exactly regulated and adjusted to the child's delicate powers.

Closely allied to the subject of the preservation of the child is that of strengthening the race by caring for the future generation. Here, again, is the lower classes which we must take into consideration. The so-called modern or new woman can scarcely be regarded as a child-bearing animal and may, therefore, be disregarded here. Her interest in the coming generation is a negative one, to say the most. It is the woman of the poorer strata who is prolific, and with her, too, the problem of labor is a serious one. Too great strain on her forces saps her vitality and an impaired constitution is the hereditary result. The same strictures apply here as apply to child labor. It is the duty of the commonwealth, as a matter of self-defense, to reduce this economic evil to its minimum and, by educational and legislative means, to counteract as far as possible, the detrimental influences constantly made more pressing by the constantly increasing struggle for existence.

Restriction of Marriage.—In connection with this subject of the future generation, I wish to touch on one subject which of late years has been made somewhat more prominently public than usual. Recently bills have been introduced into several legislatures looking into the restriction of marriage among certain classes of defectives, tuberculous invalids being included in this designation. Fortunately, none of these measures has met sufficient support to secure their enactment. I say fortunately, because the prospects which they hold forth are utterly fallacious. Even though it be granted that the children of consumptives are necessarily defective and of detrimental influence on the race, which is far from conceded, the measures proposed would utterly fail to produce the results sought. The provisions are too easily eluded. To forbid marriage in one state does not prevent its accomplishment in an adjoining state. To prevent marriage in all states would not prevent procreation; it would simply place a premium on illegitimacy of children. Would the end result be an improvement?

EDUCATIVE INFLUENCES.

But the barest mention may now be made of the educative influences, and that of only a few, as this paper has already exceeded the bounds intended for it. The first of these is legislation. Ordinances against promiscuous expectoration can not fail to have an influence much greater than simply the possibility of punishment for a misdemeanor would indicate; so, too, will legislation with reference to notification, possible isolation, inspection and disinfection. They keep the attention of the people alert to the dangers of transmission.

Antituberculosis societies may also be of great advantage, whether national, state, county, or purely local, through the prominence given the subject and the association of the medical profession and the laity working together for a single purpose. The possible effect can not be measured now. Whether our anticipations regarding them will ever be fully realized only time can reveal.

The possible influence of the lay press is very great, much greater than the actuality. There are several reasons for this condition. In the first place, their functions are numerous; there must be a great diversity and division of efforts; purveyors of news, their editors can not reasonably be expected to keep hammering at the one subject as is requisite in a campaign of popular education; furthermore, being conducted by and the contributions being made by lay people, it is impossible to avoid much erroneous matter unless there should be a closer alliance with the medical profession than heretofore, an alliance which it seems to be very difficult to establish.

Of the greatest potential power is the public school. We have scarcely begun to exploit its possibilities. There systematic and correct instruction might readily be given in courses extending throughout all grades, giving the rising generation a groundwork of practical hygiene which would prove of much greater value to the nation than many of the branches to which much attention is now given. It would not only be the rising generation which would profit by this, but also the present generation. What the school children carry home they impart to their patients, particularly in branches which the child recognizes as applying to all the members of the family.

It is a matter of congratulation that some of the labor and fraternal organizations are also turning their attention to the uprooting of tuberculosis in their efforts to improve the condition of their members.

When we view the antituberculosis propaganda from all its view points, when we consider it in all its bearings on the community at large, we are forced to accept the conclusion that a duty of unmeasured magnitude is ours whether we will or not. It is a duty which no others can assume and, therefore, all the more our duty as members

of the medical profession to be instant in season and out of season in laboring with the people and for the people, looking to the elimination of the most important of the diseases afflicting mankind at present.

With all our enthusiasm, however, and with all our sense of the imperative nature of this study, we must not fail to recognize the fact that our efforts must be tempered with good judgment lest we do harm while attempting to benefit. To a certain extent we have been carried away in the past and a phthisiophobia has arisen which is in itself harmful, useless and cruel, and which it will be difficult to allay. It is our bounden duty to combat this as an error at the same time that we are striving to disseminate correct information which will also be effective.

A PLEA FOR CREMATION IN TUBERCULOSIS AND SIMILARLY INFECTIOUS DISEASES.*

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The first modern cremation took place in Italy in a furnace invented by Professor Brunnetti, of Padua, in 1869. The year 1874 saw a number of cremations in Breslau and Dresden. Since then the movement has grown gradually and to-day there exist crematories in nearly all civilized countries excepting Russia and Turkey. Our country in 1900 had twenty-seven crematories, one in each of the following cities, San Francisco having two, Los Angeles three. I mention them in the order of their establishment:[1]

Locality.	Year of establishment.	No. of cremations Dec. 31,1901.
Fresh Pond, N. Y.	1885	3,903
Buffalo, N. Y.	1885	484
Troy, Earl County, N. Y.	1890	146
Swinburne Island, N. Y. (under the charge of the health officer of the Port of New York)	1890	106
Waterville, N. Y.	1893	38
St. Louis, Mo.	1888	1,054
Philadelphia	1888	914
San Francisco, Odd Fellows	1895	1,535
San Francisco, Cypress Lawn, Cal.	1893	632
Los Angeles, Cal. (three)	1888-1906	1,352
Boston	1893	1,057
Cincinnati, Ohio	1887	647
Chicago	1893	695
Detroit	1887	371
Pittsburg, Pa.	1886	216
Baltimore	1889	180
Lancaster, Pa.	1884	95
Davenport, Iowa	1891	134
Milwaukee, Wis.	1896	178
Washington, D. C.	1897	109
Washington, Le Moyne	1876	42
Pasadena, Cal.	1895	55
St. Paul, Minn.	1897	55
Fort Wayne, Ind.	1897	14
Middletown, Conn.	....	....
Total		14,012

ARGUMENTS IN FAVOR OF CREMATION.

It is, of course, well known that in truly oriental countries, as in East India, cremation is the most prevalent method of disposing of the dead. The arguments in favor of cremation have been presented again and again. The insanitary and dangerous conditions surrounding many graveyards are well known to the unbiased sanitarian and careful investigator. A physician (Dr. Adams) of this very city of Boston spoke, more than twenty years ago, the following impressive words on this subject:

The Christian churchyard is often a contracted plot of ground in the midst of dwellings literally packed with bodies, until it becomes impossible to dig a grave without disturbing human bones, and the earth becomes so saturated with foul fluids and the emanations so noxious as to make each churchyard a focus of disease.

Inhumation and Contagion.—Medical history is full of incidents showing that contagious and infectious diseases have been propagated from superficially buried bodies which had succumbed to infectious diseases through a washing away of the soil of cemeteries and through disinterment of the individual graves or the removal of the burial ground.[2] Men and beasts alike have been known to become diseased and have died from such sources.

Mr. T. Spencer Wells, in speaking on cremation before the British Medical Association in 1880, said that water derived from sources near graveyards, being often neither cloudy nor stinking, but rather enticing and popular, like the water of the Broad Street pump in 1874, has carried cholera to those who drank it. Later on he asked: "How often may typhoid fever not have been caused in this way? Who can tell?" We know that this source of typhoid fever is very frequent. I have it on the authority of Prof. A. E. MacDonald, formerly medical superintendent of the Manhattan State Hospital, that a few years ago on Blackwell's Island an epidemic of typhoid fever among the inmates and employés of that institution had been distinctly traced to drinking from a well, the water of which passed through ground in which the victims of a previous typhoid epidemic had been buried. The closing of this well stopped the epidemic as if by magic.

I have no evidence that any real harm has ever been done by the emanation of obnoxious gases arising from putrefaction, but minor diseases such as diarrhea and simple dysentery seem, according to Bermingham,[3] to be produced by the suspension in water of earthy and animal organic matter (calcium and magnesium sulphates and chlorids, calcium and ammonium nitrates and large quantities of sodium and magnesium chlorids). The constant prevalence of dysentery at Secunderabad, in Deccan (India), appears to have been partly owing to the water which percolated through a large graveyard. The late Dr. J. Lewis Smith, New York, in an address before the New York Academy of Medicine, related the case of a grave-digger who, after having reopened the graves of persons who had died twenty-three years before from diphtheria, contracted the same disease from this source and finally fell a victim to it. Bianchi, quoted by Cobb,[2] demonstrated that the fearful reappearance of the plague at Modena was caused by excavations in ground where, 300 years previously, the victims of the pestilence had been buried.

But it would seem that neither floods nor disinterments are necessary for the pathogenic micro-organisms to work their way to the surface and then be the cause of the propagation of dangerous infectious diseases. Pasteur's experiments in regard to splenic fever of cattle (charbon) and Domingo Freire's in regard to yellow fever in Rio Janeiro, and Dr. Burton's report in 1853 also regarding the spread of yellow fever, are sufficient evidence of this. Thus it would seem that the burying of any body which has succumbed to an infectious disease, such as cholera, yellow fever, typhoid fever, diphtheria, tuberculosis, etc., will always endanger the liv-

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. This table was prepared by Mr. Sumner, president of the Odd Fellows Cremation Society, San Francisco. The author made a few additions, bringing the table more up to date.

2. Cobb: "Earth Burial and Cremation."

3. Bermingham: "The Disposal of the Dead." 1881.

ing. The seemingly innocent earthworm plays, according to Pasteur and the more recent experiments of Lortet and Despeignes, a very important rôle as an intermediary in bringing to the surface living pathogenic micro-organisms. The two latter gentlemen's observations refer particularly to Koch's bacillus of tuberculosis. Earthworms are capable of ingesting and ejecting the tubercle bacilli without the micro-organisms losing their virulence. The worms swallow earthy matters, and after separating the digestible or serviceable portion they eject the remainder in little coils or heaps at the mouth of their burrows. In dry weather the worm descends to a considerable depth and brings up to the surface the particles which it ejects. It would thus seem that even the deeper burial of the bodies is no guarantee that living infectious micro-organisms will not be brought to the surface.

In all prevailing epidemics of yellow fever the cremation of those who have succumbed to it has proved one of the efficient means of controlling the spread of the disease. Nelson[4] says:

> The oldtime Spanish possessions of the Main and West Indies export typhoid fever as regularly as India rubber, coffee and tobacco.

As a remedy to check the ever new crops of the yellow fever germ, he advocates the Holt quarantine system on the one hand and cremation on the other.

Cremation has been advocated for all infectious diseases by any number of physicians and sanitarians. It is only since the above-mentioned experiments of Lortet, Galtier, Gartner and Schottelius that tuberculosis has been included in this list of diseases. These experiments have demonstrated that the tubercle bacillus can resist putrefaction for years and be brought to the surface by the earthworm. Elsewhere[5] I have referred to the resolution adopted at the third Congress for the Study of Tuberculosis in Paris, 1894, for recommending the obligatory cremation of all individuals who had died of tuberculosis. This motion was not carried. I feel that it would be presumptuous for me, after the Paris failure, to ask you, the representative hygienists and sanitarians of this country, to discuss this subject from just the same point of view with the hope of passing favorable resolutions. I do not plead for your support in the matter regarding cremation for tuberculosis alone, but for all the far more infectious and communicable diseases as well.

ECONOMIC ADVANTAGES OF CREMATION.

Furthermore, I do not plead with you for cremation only on the ground of a sanitary measure. I claim that this simpler and more expedient way of disposing of the dead would be an economic advantage to many individuals and to every community at large.

In an address to the Chicago Medical Society, in advocacy of cremation, Dr. Charles W. Purdy made some striking comparisons to show what a burden is laid on society by the burial of the dead. According to his carefully prepared estimate one and one-fourth times more money is expended annually in funerals in the United States than the government expends for public school purposes. Hundreds of acres of land are annually consecrated to the burial of our dead. In many instances and particularly in the vicinities of large cities burial lots are at a premium. In some of our fashionable cemeteries in New York you can not buy the few feet of ground needed for the slow, loathsome decomposition of your body for less than $1,000.

I have been led in my work in tuberculosis to become an ardent advocate of cremation, especially in our large communities and particularly for people in moderate means or the really poor. I am free to confess that the danger of propagation of tuberculosis through the graveyard as compared with other diseases is comparatively small. But the thousands of acres which, near large cities, are devoted to the dead and are thus useless we need for the living. How many a model tenement house where people might get light and air could be built if the dozen or more graveyards of many of our large cities were laid out in building lots surrounded by little parks and playgrounds, where the living children could play and the living mothers and wives of our laboring men could get a breath of air, which it is so difficult to get in the present crowded conditions of the average tenement districts? Would not this mean prevention of tuberculosis and other diseases due to overcrowding among old and young alike?

In my labors among the consumptive poor I have always been painfully impressed with the fearful expense which the ordinary funeral, including the buying of a burying lot, entails. Consumption is an expensive disease. If the patient does not get well within a year, if the disease becomes chronic and incurable, there is invalidism, loss of earning capacity often for two, three and more years. When the end comes there is no end to the expense. A costly coffin, expensive ceremonies and a costly burial lot sap in many cases every resource of the relatives. I have known poor people to go into debt for the sake of a decent funeral, for which it took years to pay. In view of such experiences, which all physicians practicing among the poor must have had, are we not justified, is it not our duty to plead for the relatively inexpensive disposition of the dead by cremation and for simple funerals? Before leaving the subject of funerals and funeral ceremonies I must call attention to the many serious illnesses which are contracted constantly by the mourners who take part in the funerals and stand by the open grave with uncovered heads in all kinds of weather. This danger is done away with by holding the service in the anterooms of the crematory.

Cremation and Inhumation Both Processes of Oxidation.—How does cremation differ in its essentials from inhumation? The one is a slow and the other a rapid process of oxidation, a simpler, surer, purer manner of rendering ashes to ashes, dust to dust, a sweeter, cleaner process of rosy heat instead of festering corruption, which may, through wells and springs, bring disease to the living. It is true it is not a common method, and it is said to be not in accordance with the Scriptures and with orthodox teaching, but so-called orthodoxy is no longer considered infallible, and the number of advocates of cremation among clergymen, philanthropists, educators and even tender women, who prefer this to any other disposal of our mortal remains, is constantly increasing. When one has seen the speedy, clean process of disposing of the body by modern methods of cremation, he rarely fails to become converted to it. Says an eyewitness:[6]

> I have stood before the threshold of the crematory with a fluttering heart and trembled at the thought of using fire beside the form of one I loved. But when, in obedience to his

4. Nelson: "Yellow Fever," The Twentieth Century Practice of Medicine, p.

5. Knopf, S. A.: "Tuberculosis," The Twentieth Century Practice of Medicine, vol xx, p. 214.

6. Wills, William Le Moyne: "Sanitary Aspect of Cremation," Southern California Practitioner, vol. I, No. 4.

own dying request, I saw the door of the incinerator taken down, its rosy light shine forth, and his peaceful form, enrobed in white, laid there at rest, amid a loveliness that was simply fascinating to the eye and without a glimpse of flames, or fire, or coal, or smoke, I said, and say so still, this method, beyond all others I have seen, is the most pleasing to the senses and most grateful to the memory. And as I turned away from the incinerator, where we had left the body of our friend, it was pleasant to think of him still resting in its rosy light, enveloped by what seemed to us as floods of purity. When all was over, nothing remained but a few fragments of calcined bones and delicate white ashes and dust, perfectly pure and odorless.

INDORSEMENTS OF CREMATION.

I wish I could give you the expressions of opinions which have appeared from time to time in articles on this subject. In a publication entitled "Opinions on Cremation" strong pleas and expressions of high approval are given by hundreds. Among the names which appear there I cite only a few:

Prof. Felix Adler, New York.
William Waldorf Astor, New York.
Rev. Samuel L. M. Barlow, New York.
Dr. N. E. Brill, New York.
Rev. Edward Everett Hale, D.D., Boston.
Hon. Abram S. Hewitt, New York.
Rev. R. S. Macarthur, D.D., Calvary Baptist Church, New York.
Rev. R. Heber Newton, D.D., New York.
Rt. Rev. Henry C. Potter, bishop of New York.
Dr. Edward M. Sternberg, surgeon-general U. S. Army, Brooklyn.
Charles F. Wingate, sanitary engineer, New York.
Ella Wheeler Wilcox, New York.

Of the many great men who, true to their convictions, made provision that their bodies should be cremated and whose mortal remains, in accordance with their request, were incinerated, let me mention only the following:

Prof. Samuel D. Gross, one of the greatest of surgeons.
Gen. William Ludlow, U. S. Army.
Robert G. Ingersoll, philosopher and fearless agnostic.
Percy B. Shelley, poet.
Anton Seidel, musician.
John White Chadwick, Unitarian divine.
George E. Waring, Jr., the skilful engineer and sanitarian.
Dr. Peter Dettweiler, my own beloved teacher, the creator of modern phthisiotherapy and founder of the first sanatorium for the consumptive poor.

AUTHOR'S QUESTIONNAIRE.

To get direct answers which I could utilize for this paper I sent out a number of letters to well-known clergymen, educators, sociologists, sanitarians and physicians. The following three questions were asked:

1. *Do you or do you not approve of cremation from a sanitary point of view?*
2. *Do you or do you not think it a social and economic advantage to the individual and the community at large to have cremation take the place of inhumation?*
3. *Do you or do you not object to cremation from any other point of view (legal, religious or ethical)?*

Nearly all my letters were answered with cordiality, and I desire to express herewith my deep appreciation and thanks to all my correspondents who have thus honored me and have been helpful by bringing their opinions to bear on this important subject. Many of the answers were highly interesting, and I hope I will be permitted to publish them in full in connection with a second article on this subject. For to-day I content myself by simply mentioning the names and giving their answers collectively and refuting, as far as I can, the few statements which were expressed adversely to cremations.

ANSWERS FAVORABLE TO CREMATION.

To questions 1 and 2, concerning approval or disapproval of cremation from a sanitary and economic point of view, the following answered approvingly, and to question 3, asking for an expression of opinion regarding the possible legal, religious or ethical objections, a negative reply was received from the same:

Miss Jane Addams, Hull House, Chicago.
Prof. Frank Billings, M.D., LL.D., Chicago.
Dr. John W. Brannan, president board of Bellevue and Allied Hospitals, New York.
Prof. Nicholas M. Butler, president Columbia University.
Prof. Edward T. Devine, Ph.D., LL.D., secretary of New York Charity Org. Society.
Hon. Robert De Forest, former tenement-house commissioner, New York.
Prof. Irving Fisher, Yale University.
Prof. Franklin H. Giddings, Columbia University.
Rev. Emil G. Hirsh, Ph.D., Chicago.
Prof. A. Jacobi, M.D., LL.D., New York.
Prof. E. G. Janeway, M.D., LL.D., New York.
Prof. W. W. Keen, M.D., LL.D., Philadelphia.
Hon. Herman L. Kudlich, former magistrate, New York.
Ernest J. Lederle, Ph.D., consulting sanitary expert, New York.
Comptroller H. A. Metz, New York.
Dr. A. E. Macdonald, formerly superintendent of Manhattan State Hospital for Insane.
Prof. T. M. Prudden, M.D., LL.D., New York.
Prof. F. C. Robinson, president of American Public Health Association, Brunswick, Maine.
Prof. D. B. St. John Roosa, M.D., LL.D., New York.
Rev. Thomas R. Slicer, minister of All Souls' Unitarian Church, New York.
George A. Soper, Ph.D., consulting sanitary engineer, New York.
J. G. Phelps Stokes, New York.
Prof. James Tyson, M.D., LL.D., Philadelphia.
Prof. William H. Welch, M.D., LL.D., Baltimore.
President R. S. Woodward, Carnegie Institution, Washington, D. C.
Surgeon-General Wyman, Washington, D. C.

President Eliot, of Harvard, writes that he approves of cremation from a sanitary point of view and has no religious, legal or ethical objection to this mode of disposing of the dead, but in his opinion the option should be open regarding question 2. He thinks that in different communities different answers will be given to the question whether it is a social and economic advantage to the individual and the community at large to have cremation take the place of inhumation.

Prof. W. W. Keen, M.D., LL.D., Philadelphia, who answered questions 1 and 2 in the affirmative and No. 3 in the negative, permitted me in addition to publish the following letter:

You are at perfect liberty to state that my own body will be cremated with the knowledge and consent of my children. You are also, of course, at liberty to state (because cremation at that time created more remarks than it does now) that in accordance with the understanding between my dear wife and myself her body was cremated also. I feel very strongly in reference to the advisability of cremation and am, therefore, perfectly willing that my personal and family arrangements shall be known, although ordinarily I should shrink very much from making public such private family affairs.

The Hon. H. C. Kudlich added to his approval of cremation on sanitary and economic grounds the following important expression concerning the possible legal objection:

Evidences of crime may be destroyed by cremation, but it is conceivable how, with proper regulation, this may be reduced to a minimum.

Mr. Andrew Carnegie, while not expressing any opinion on the sanitary, legal, religious or ethical aspect, wrote as follows:

I think cremation is fast becoming necessary, especially near large cities.

Dr. A. H. Doty, Health Officer of the Port of New York, wishes to emphasize his approval of cremation only in cases in which persons died from infectious diseases.

The Hon. H. A. Metz, comptroller of New York, expressed approval of cremation from every point of view, but particularly in relation to large communities.

The well-known sociologist and philanthropist, J. G. Phelps Stokes, wrote me the following interesting letter:

I am pleased to say that I regard cremation as the most rational method of disposing of pauper dead. The present system in operation in the public burying-grounds of this city appears to me to be indefensible I think any citizen of New York who would visit the potter's field on Randall's Island would be overcome with horror at the appearance of the pauper trenches there and at the methods in vogue. In expressing approval of cremation for the pauper dead I would make exception, when practicable, in cases of such as might, prior to their deaths, express deep religious or other conscientious objections to it.

As to the balance of population, I should regard cremation as of social and economic advantage to the individual and the community only in so far as the individual and the community might approve of it. I should not approve of enforced cremation against the will of the individual, except in cases of an extreme nature, as, for instance, of virulent contagion, when the safety of the community might require it. I have no objection to cremation on legal, religious, ethical or other grounds.

Dr. Thomas Darlington, commissioner of health, New York City, answering question 1, regarding sanitary aspect of cremation, approvingly writes:

The application of the principle is not easy. The first step in any great reform is the important one. Perhaps the most feasible recommendation I can make is this: To advocate the cremation of the unclaimed dead at the morgue, instead of burying them, as at present, in the potter's field. This would be an entering wedge and would prove, perhaps, a wise beginning. Gradually the system could be further applied as opportunity offers.

Professor Janeway kindly wrote as follows:

There is but one valid objection to cremation, and that is on medicolegal grounds; cremation would destroy evidence of poisoning in case such had happened. This should thoroughly be provided for by rigid examinations of facts preceding death in case of cremation and also of body, if need be.

President Woodward, of the Carnegie Institution, Washington, D. C., wrote:

With respect to your query about cremation, I would say that this process of disposition of the dead seems to me to be worthy of approval from all points of view, sanitary, social, economic, legal and ethical. It does not necessarily follow, however, that it would be wise to seek immediately to put in operation a change so radical as the general adoption of cremation would be. Here, as in other matters, we must learn a lesson from the general process of evolution and be content if improvement comes only painfully slowly.

Many well meant reforms have failed of approval by reason of over zeal of reformers and by reason of a general lack of appreciation of the benefits of the reforms. My impression is that the best way to impress the advantage of the reform in question on society at large is for the reformers themselves not only to advocate the reform but to offer themselves as object lessons. This I am willing to do in my own case.

To the main objection to cremation, such as is graphically pointed out by Professor Janeway in the preceding letter, I have almost the same answer as he and Judge Kudlich were good enough to express. I would go one step further and make a thorough postmortem inspection of the entire body and a chemical examination of the stomach and intestines with an official report of the findings obligatory in all cases, before a certificate for cremation is granted.

The Rt. Rev. David H. Greer, bishop-coadjutor, was good enough to send the following letter, which speaks for itself:

I must confess that cremation is a subject which has interested me a good deal, and yet I have not come to any positive conclusion about it. From a sanitary point of view it certainly is much better than inhumation, but from a sentimental point of view (and the sentiments of the persons more immediately concerned must be regarded at such a time) I have some misgivings about it. I should prefer cremation for myself, but not for one of my family.

ANSWERS NOT FAVORABLE.

In justice to the few of my correspondents adverse to my views I feel that before closing I must reproduce the essentials of their letters.

Dr. E. L. Trudeau, director and founder of the great Saranac Lake institution, the Adirondack Cottage, had the kindness to write as follows:

I have given the subject of cremation no special thought and I have no very decided opinion about it. On legal, religious and ethical grounds I am opposed to it.

The replies of Judge Alfred E. Ommen to the respective questions were:

1. Yes, but purely from a sanitary point of view.

2. I presume from a financial standpoint cremation is cheaper and has the advantage of leaving land now used for inhumation to be used for houses and other purposes.

3. From a legal standpoint there are many objections that may be raised against cremation. For example, the determination as to whether a person has been murdered or not. Often people are found dead under some suspicious circumstances. An investigation is made and nothing is found. The body is buried and then a month or two later a number of things arise that prove murder. It needs only the confirmation of an analysis or examination of the body. If there were cremation this evidence would, of course, be destroyed, and murderers like Carlyle Harris, Dr. Buchanan and Patrick would have gone free.

I am also frank to state that, not from any religious standpoint, but purely from the standpoint of sentiment and affection, there is something unnatural to me in the burning of a human body and the entire obliteration of any remains, except a handful of ashes. I know that there are many people who look on such a state of mind as maudlin sympathy, yet at the same time I feel that a flower-covered grave keeps many a man straight and causes memory to go back and produces feelings and conduct toward his fellowmen which he would not ordinarily have.

As I said, the proposition from a sanitary and a financial standpoint is a good one, and if that were all I believe the world would adopt it immediately. You know that this world is getting to be colder and colder all the time, and we are becoming very practical and plain, matter-of-fact. The rush for money, power and glory is stifling all those ethical and grand qualities that many of our ancestors possessed. Our home influences are waning and to me it is a very serious situation. I am very much inclined to cling to anything, even though possibly insanitary and more expensive, that will stir in men and women better feelings and cause them to halt in the mad chase for power and wealth. Of course, you might say that a grave can be made by simply burying an urn containing ashes. If that were done that would occupy land and the question would resolve itself into one of sanitation.

OBJECTIONS CONSIDERED.

To my esteemed friend Dr. Trudeau's objection to cremation on religious and ethical grounds I make no reply, except to honor him for his high sentiments. To Judge Ommen I feel particularly grateful for his elaborate reply. Concerning his legal objection I refer him to Dr. Janeway's letter, and what I said above about postmortem examination of the body as a whole and the chemical analysis of stomach and intestines of all bodies before cremation. In reply to the pessimistic sentiments expressed—for example, that this world is growing colder and colder—I must take issue with my good friend.

Those of us who are interested in practical philanthropy will bear out my statement when I say that, on the contrary, there never has been so much practical good done to our less fortunate fellow men as in our time. More noble men and women devote their lives to the amelioration of suffering now than at any other time in the history of mankind. When the Hon. Alfred E. Ommen enters on ethical aspects and speaks of sentiment and affection I feel that my own power of expression will not be sufficient to convince him. I simply wonder what he means when he speaks of cremation as something unnatural, and why he considers it an entire obliteration.

How can a sentiment which is purely imaginary be of real benefit to mankind? The only uplifting influence that could come from a grave would be from the thought that there was something left there to be loved. One look at the real contents of a grave would remove this sentiment forever. It is the memory of the loved one, the influence of his noble actions, the results of his goodness that remain to guide, help and uplift us. The grave merely symbolizes this through our early associations and religious training. Could not ashes and an urn symbolize this as well as decay and corruption and a mound of earth? Has not our immortal Longfellow, poet and seer, told us:

> "Dust thou art, to dust returnest, was not spoken of the soul."

The following beautiful words from the Rev. Thomas R. Slicer on the subject will, I know, answer Judge Ommen's objections to cremation on ethical and sentimental grounds much better than I, with only a medical training, could possibly do:

> I approve of cremation as a means of returning by the quickest possible process the chemical constituents of the body to the earth, to which that body is nearly related. The decay of the grave is combustion. It seems rational to accomplish in three hours what is badly done by the slower processes in thirty years. Nothing seems to me a more direct affront to Nature than hermetically to seal up a human body and then place it in the ground, as though one defied Nature to have access to that which belongs to it. I think no one can witness the incineration of a human body without feeling that a clean flame has sincerely and quickly disposed of the only part of the body which can be consumed, leaving the remainder to be returned to the earth as it was. I do not see how there can be any religious objection to cremation, except from the standpoint of those who believe in the resurrection of the physical body; but as all intelligent students now who believe in immortality rather believe that you can not bury a man and that eternal life is a condition and not a place, this objection from the religious standpoint must soon disappear. Feeling, as I do, that all the real relations are spiritual, and that everything else is incidental to the communion of one human soul with another, I shall be glad to see the time when society shall more generally approve of disposing of the house of life by means which shall remove its decaying structure quickly and with the least danger to the survivors. The fundamental proposition in my thinking is that man has a body, but man is a spirit. I have always felt that the seabird that flew back and forth over the flame in which Shelley's body was consumed on the shores of the Mediterranean might very well typify a liberated soul which stayed its flight awhile to watch its cage consume.
>
> 16 West Ninety-fifth Street.

[FOR THE DISCUSSION ON THE PAPERS OF DRS. HOLDEN, HAYNES AND WHEATON (PUBLISHED JANUARY 19) AND BEGGS AND KNOPF, SEE PAGE 360.]

THE OPSONIC CONTENT OF THE BLOOD OF INFANTS.*

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BALTIMORE.

In 1901 Moro[1] pointed out that the bactericidal power of the blood serum of breast-fed infants markedly exceeds that of artificially fed ones. It was thought of interest to determine the opsonic content of the blood of infants raised under different conditions; particularly as the recent researches of Wright, his pupils and other investigators here and abroad seem to show that these substances which prepare the bacteria for phagocytosis play an important rôle in the defense of the organism against certain forms of bacterial invasion. The method employed to determine the opsonic content of the blood was that described by Simon and Lamar,[2] and I adhered the more closely to this method, as I intended to compare my results with those obtained by Simon in adults. Furthermore, the method of Simon recommended itself for another reason. The work can be carried out without assistance and without continued comparison with normal individuals.

PROCEDURE.

Briefly, the procedure is as follows:

The serum is diluted with a 1 per cent. saline solution in a proportion of 1 to 20 by means of a pipette used in the counting of white corpuscles. Then twice nine divisions of the pipettee are put in a small glass tube. In preparing a dilution of 1 to 40 nine divisions of the dilution 1 to 20 are mixed with nine divisions of the saline solution. The tubes are then charged with bacteria directly from an agar tube. Lastly, the equivalent of 6 divisions of an emulsion of blood corpuscles containing the leucocytes is added from a specially calibrated pipette. In this manner the total amount of fluid contained in each tube corresponds to 24 divisions of the pipette. The blood corpuscle emulsion is obtained in the usual way. The blood is taken up in a 0.1 per cent. solution of ammonium oxalate in 1 per cent. solution to prevent coagulation. The blood corpuscles are sedimented and washed three times with 1 per cent. saline solution with the help of the centrifuge. Finally, the supernatant fluid is pipetted off as completely as possible and the sediment is stirred up. The charged tubes are kept in the incubator for one-half hour. Smears are made and stained with alkaline aqueous methylene blue, so that the red blood corpuscles remain unstained. Then the percentage of leucocytes which have taken up bacteria is determined.

In most cases 50 cells were counted and this proved sufficient, since the counts of the first 25 cells agreed

* From the children's department of the Johns Hopkins University.

* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. "Biologische Beziehungen zwischen Milch und Serum," Wien. klin. Wochschr., 1901, p. 1073. The objections of Schutz (Jahrb. f. Kindhlk., 1905, lxi, p. 122) do not seem to be valid, since his method of experimentation does not seem to permit of a comparison with the work of Moro.

2. Johns Hopkins Hosp. Bull., January, 1906, xvii.

very well in the great majority of cases with those of the second 25. In some instances, particularly when this agreement was not good, as many as 200 cells were counted. In a number of cases not only the percentage of phagocyting leucocytes was determined, but at the same time the number of bacteria taken up by the single leucocytes were counted. The average number of bacteria taken up by a leucocyte designates the phagocytic power (Wright). Thus it was found that in cases in which, in a dilution of 1 to 20, 100 per cent. of the leucocytes had taken up bacteria the values for the phagocytic power showed a great difference from those obtained when the serum was employed in greater concentrations. For instance:

Serum.	Percentage of phagocytosis.	Phagocytic power.
I. Concentrated	100	23
1 to 20.....	100	10.5
II. Concentrated	100	19.5
1 to 20.....	100	11.2

In cases in which the percentage of phagocytosis in a given dilution is very high, it may become necessary either to determine the phagocytic power or to employ higher dilutions in order to establish striking differences between the sera to be examined.

In 31 instances the phagocytic power was determined at the same time with the percentage of phagocytosis and the average phagocytic power was calculated which corresponded to the percentage of phagocytosis in the following manner:

Percentage of phagocytosis.	Phagocytic power.
90 to 100 (exclusively.)	9.7
80 to 90	5.6
70 to 80	4.3
60 to 70	3.8
50 to 60	2.6
40 to 50	2.2
30 to 40	1.4
20 to 30	1.0
10 to 20	0.5

This table seems to indicate that, as a whole, a correspondence exists between the percentage of phagocytosis and the phagocytic power. It must be mentioned, however, that the individual values for the phagocytic power in the different groups showed rather considerable variations. This is probably due to the fact that the method employed does not permit an exact comparable determination of the phagocytic power. Thanks to the kindness of Dr. Potter, I was able to convince myself that the time which the serum is permitted to act on the mixture of bacteria and corpuscles, as well as the number of bacteria added, play an important rôle in regard to the number of bacteria taken up by the leucocytes. In the method I employed, the time consumed in the preparation of the single tubes was not the same for all the tubes, and the number of bacteria added in our experiments is necessarily subject to more or less wide variations. Whether these factors operate to the same extent in the dilutions employed is questionable.[3] Nevertheless, it is very probable that, as a rule, a correspondence exists between the percentage of phagocytosis and the phagocytic power, particularly in the class of cases which I observed. In spite of the inherent crudeness of the method, the table may be taken as an expression of this relation without paying attention to the exactness of the figures.

In all my experiments the tubes were kept in the thermostat, for one-half hour, but from the following experiments it does not seem to make a material difference in regard to the percentage of phagocytosis whether the time of incubation is one-quarter or one-half hour.

	One-half hour.	One-fourth hour.
Serum	I. 1 to 20, 88 per cent.	92 per cent.
Serum	I. 1 to 40, 50 per cent.	50 per cent.
Serum	II. 1 to 40, 4 per cent.	6 per cent.

Heating the serum to 59 C. for ten minutes prevented the phagocytosis completely. For instance, a serum one-half diluted gave a phagocytosis of 100 per cent., while after heating no phagocytosis occurred.

A large number of control experiments were conducted, using saline solution in place of serum. Frequently these controls were entirely negative, but in a number of instances one or two cells were counted as positive. These cells contained one or two cocci, rarely as many as four. It was not always certain whether these cocci were actually in the cells, but these cells would in all probability have been counted as positive in the regular counts. In the figures given in my tables it was not deemed necessary to make any corrections, as this possible error seems to fall well within the errors of the method.

ANALYSIS OF CASES.

Although it is well known that different bacteria are not equally susceptible to phagocytosis I used only the *Staphylococcus citreus*. This seems to be permissible, since Simon[4] has found that if the percentage of phagocytosis for a normal serum is high for one kind of bacterium it is correspondingly high for others, while the absolute values for the different organisms may vary considerably. It must be noted that we are not dealing here with immune opsonins and that cases of infection with *Staphylococcus citreus* are not very common so far as I am aware. The total number of cases examined was 45. In only a few instances could the examinations be repeated, on account of the strong objections of the mothers.

The average percentage of phagocytosis in 20 normal adults was determined by Dr. Simon with the *Staphylococcus citreus*. He found for the dilution of 1 to 20, 37 per cent.; for 1 to 40, 9 per cent. The highest values for 1 to 20 were 72 per cent.; for 1 to 40, 42 per cent. The lowest for 1 to 20 was 12 per cent.; for 1 to 40, 0 per cent. But there are individuals who present rather constantly higher values. Thus my own serum gave repeatedly for 1 to 20 88 per cent.; for 1 to 40, 50 per cent. In a few other individuals still higher values were obtained.

GROUP 1.

No.	Age, days.	Color.	Sex.	Weight, gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1 a	5	W.	M.	3740	Gaining weight	96	84	88
1 b	12	....	....	4135	....	90	81	90
2	6	....	M.	3590	Gaining weight, slight icterus	92	78	85
3	20	W.	F.	3750	Gaining weight	98	88	90
4	3	....	F.	3150	Gaining weight	100	70	70
5	10	C..	F.	3952	Gaining weight	98	76	78
6	16	W.	M.	4360	Gaining weight, admitted	90	66	73
7	9	C..	M.	3350	Gaining weight	92	40	43
8	9	C..	M.	3500	Gaining weight	92	68	73
9	5	W	M.	4330	Gaining weight, strong	62	30	48
10*	45	W.	M.	3620	Admitted not well nourished; eruption on scalp.	48	14	29
	Average					87	61	

* About one and one-half months.

My own cases may be divided into several groups. The first group is composed of 10 breast-fed infants varying in age from 3 days to about 1½ months. These babies were inmates of the maternity ward of the Johns Hop-

3. These factors do not seem to play an equally important rôle in regard to the percentage of phagocytosis, at least not within limits easily to be controlled.

4. Jour. of Exp. Med., viii, 1906, 6; also Am. Jour. Med. Sci., 1907 (about to appear).

kins Hospital, and I express my indebtedness to Dr. Williams and to his staff for the courtesy with which they placed the material and their laboratory at my disposal.

Some of the members of this group had received occasionally some additional feeding besides the breast. But the breast feeding always greatly preponderated. Case 10 showed the lowest values. This infant was admitted to the hospital 3 or 4 weeks after birth with a weight of 3,500 gm. The state of nutrition was rather poor, but no special lesions could be made out. The other babies were all doing well. The average values of these cases are higher than those for normal adults. Wright[5] states that the phagocytic power of the newborn infant equals about that of the mother. If we should be permitted to assume that the percentage of phagocytosis of the

GROUP 2.

No.	Age, months.	Color.	Sex.	Weight, in gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1	4	W.	F.	.....	Mild pertussis; overfeeding; good nutrition.	90	50	56
2	¾	W.	M.	3175	Vomiting; squamous eczema; two days no food.	94	66	70
3	4	W.	M.	5640	Irregular prolonged nursing; strong; good nutrition.	90	58	64
4	4	W.	M.	6435	Overfeeding; rachitis; exudative diathesis.	46	14	30
5	2	C...	M.	3800	Lues; rachitis; overfeeding.....	68	42	62
6	1¾	C...	F.	2040	Lues, rachitis; slight overfeeding; poorly nourished.	32	16	50
7	9	W.	M.	8420	Mild bronchitis.....	82	48	59
8	8	W.	M.	5895	Rachitis; bronchitis; irreg. feeding; always weak and cross; temp. 99.4.	56	28	50
9	3	W.	M.	5440	Pertussis moderately severe; mild bronchitis; overfeeding; temp. 99.4.	44	14	32
10	9	W.	M.	.....	Right ear running; right cervical glands enlarged; pale; mild bronchitis; well nourished; temp. 99.	96	80	63
	Average.....					70	42	

mother's blood coincides with the values for normal adults, as determined by Simon,[4] we would find an analogy for a discrepancy between the mother's and infant's blood in the results of Moro.[1] He found that the bactericidal power of the serum of the newborn before feeding equals that of the placentar serum, while later on it increases markedly.

GROUP 3.

No.	Age, months.	Color.	Sex.	Weight, in gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1	11	C...	M.	6520	Breast and oatmeal; rice.. etc.; temp. 99.2.	74	48	65
2	2	W.	M.	5160	Rachitis; fairly well nourished; breast and cow's milk diluted; constipated.	64	6	9
3	6½	W.	M.	6150	Breast, since two weeks, plus diluted cow's milk; rachitis.	100	64	64
4	3	C...	M.	3175	Breast and condensed milk; infiltrated areas on head; wasting since two weeks.	42	10	24
5	3	C...	M.	.....	Breast and cow's milk; craniotabes; well nourished; feeding irreg.; vomiting; constipation.	16	3	
6	7	C...	F.	7340	Breast, since three months, plus oatmeal bread, potatoes, etc.; slight rachitis; strong, well looking.	53	40	75
	Average.....					58	28.5	

The second group is composed of 10 breast-fed infants which were brought to the Johns Hopkins Hospital Children Dispensary, ranging in age from 3 weeks to 9 months. These infants were suffering from different ailments, but their temperature did not exceed 99.4.

In this group also additional feeding was given occasionally, but not regularly. The low values of Case 6 were obtained in a poorly nourished syphilitic baby 5 weeks of age. Here we have apparently to deal with a secondary malnutrition. Of interest is Case 4, with a phagocytosis of 46 per cent. and 14 per cent., respectively. Although the weight here does not indicate any disorder of the nutrition, nevertheless the anemia, an itching urticaria-like eruption of the skin, together with a scaly itching eruption and multiple areas of infiltration of the scalp with enlargement of the cervical glands and an erosion of the skin near the back of the head, may perhaps be taken as symptoms of the exudative diathesis of Czerny,[6] in which a diminution of the normal immunity is supposed to exist.

The third group is composed of six cases, which received regularly, besides the breast, some other food. The age varies between 2 and 11 months.

The fourth group is composed of 13 artificially fed babies, mostly fresh or condensed milk being used in these cases. The age varies between 10 weeks and 15 months.

GROUP 4.

No.	Age, months.	Color.	Sex.	Weight, in gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1 a	4	W.	F.	4250	Seven weeks breast, then cow's milk, in diff. modif.; gaining weight; slight gen. glandular enlargement; rachitis; slight emaciation; vomiting; temp. 99.4	82	32	39
b	4.5			4220	Doing poorly; temp. 98.6.....	38	16	42
2	2.5	W.	M.	3345	Emaciated; diff. modif. of cow's milk; lues.	....	38	
3 a	3	W.	F.	5045	Condensed milk; intertrigo; eruption of skin.	98	78	80
b				5160	Cow's milk.....	100	72	72
4 a	9	W.	F.	5045	Breast five wks., then cow's milk; rachitis; poorly nourished.	56	22	34
b				5215				
c				5070	Not doing well.....	58	10	17
5	13	W.	F.	9130	Breast eight months, then condensed milk and careful table diet; slight rachitis; looking very well.	70	54	77
6	6	W.	F.	6125	Breast two mos., mixed feeding to three and one-half mos., then cow's milk 99.4°; since one wk. condensed milk; bronchitis.	70	14	20
7	2.5	W.	M.		Condensed milk; irregular, mild bronchitis; disorder of nutrition due to excess of carbohydrates.	14	8	
8	4	W.	M.	3430	Condensed milk; disorder of nutrition; carbohydrates.	10	8	
9	11	W.	M.	6095	Breast two wks., condensed milk. Lues,[2] spec. fam. history; 99°.	18	2	
10	3	C.	F.	3290	Diluted cow's milk; slightly emaciated.	90	22	55
11	3	W.	F.	2780	Condensed milk; emaciated.....	60	22	36
12	15	W.	F.	6040	Breast three mos., cow's milk, then condensed milk, then cow's milk; temp. 98.9; "Milchnährschaden."[6]	48	24	50
13	6	C.	F.	5670	Breast two mos.; cow's milk according to directions.	42	20	48
	Average.....					49	25	

Cases 7 and 8 are of special interest. Both infants presented the clinical signs of a disorder of nutrition, e. g., alimentation, due to excess of carbohydrates, as described by Czerny and Keller.[7] In both cases the percentage of phagocytosis is very low. This result would well support the clinical observation that the resistance of these infants toward infection is markedly dimin-

5. Proc. Royal Soc., 1904, lxxiv, p. 147.

6. "Die Exudative Diathese," Jahrb. f. Kindhlk., 1905, lvi, p. 199.

7. "Des kindes Ernährung, Ernährungsstörungen und Ernährungstherapie," II.

ished. Both were raised on condensed milk. But the infant in Case 3, which gave the highest values, was also raised on condensed milk, but in that case the symptoms attributable to a faulty diet were very mild. Therefore, there must be other factors besides the food which influence the opsonic content of an infant's blood.

The fifth group is made up of six cases, the age varying between 3 and 20 months. In four of these cases the temperature exceeded 100, while the other two cases were too abnormal to be taken into consideration in the other groups.

GROUP 5.

No.	Age, months.	Color.	Sex.	Weight, in gms.	Remarks.	Per cent. for 1:20.	Per cent. for 1:40.	Values for 1:40 expressed in per cent. of those for 1:20.
1	20	W.	F.	7770	Rachitis; measles; ulcerative stomatitis; bronchitis; temp. 103.4°	92	56	61
2 a	4	W.	M.	6350	Art. fed; rachitis; bronchitis; left ear running; enlargement cervical glands; temp. 103.8.	51	26	46
2 b	....	....	....	6125	Temp. 101	84	32	38
3	3	W.	F.	....	Breast; intertrigo; papular vesicular eczema of limbs and trunk; temp. 101.6.	96	41	43
4	20	W.	F.	8364	Mixed feeding; indigestion; temp. 101.4.	92	64	70
5 a	6	C.	F.	....	Breast; accessory fingers on both hands; lues; hydrocephalus.	86	22	20
5 b	....	....	....	4395	Losing weight	74	16	22
6	7	W.	F.	3715	Breast; emaciated; anemic; liver and spleen much enlarged; leukopenia.	66	14	21

The febrile cases were not classified in the other groups, since it is known that in acute diseases the phagocytic power may vary considerably, and Simon frequently found high values in such cases.

RESULTS.

Summing up the results obtained in our series of investigation, we have as average values for the percentage of phagocytosis:

	Average per cent for		Highest per cent. for 1:20.	Lowest. per cent. for 1:20.	Highest per cent. for 1:40.	Lowest. per cent. for 1:40.
	1:20	1:40				
Group 1. Breast-fed hospital cases	87	61	100	48	88	14
Group 2. Breast-fed dispensary cases	70	42	96	32	80	14
Average for Groups 1 and 2	79	52	...	..	..	..
Group 3. Mixed feeding	58	29	100	16	64	3
Group 4. Artificial feeding	49	25	100	10	78	2

A distinct advantage exists in favor of the breast-fed infants. But if we consider the individual values in the different groups and compare particularly the highest values of the different groups with each other, it is apparent that our results can not be brought in parallel with those of Moro.[1] This author found that the serum of even very weak breast-fed infants exceeds in bactericidal power that of babies artificially fed and doing well. Furthermore, when a breast-fed infant with a serum of high bactericidal power had been fed on the bottle for two weeks the bactericidal power of its serum had decreased considerably. From his experiments the high alexin content of the breast-fed infant's blood seems to be directly a function of the breast milk, and he assumes the presence of alexogen substances in human milk. Some of the high values which are obtained in Group 4 do not permit us to bring the high opsonic content of the breast-fed infant's blood in direct relation to the human milk. While the kind of food may exercise a certain influence, other factors must enter into consideration. The state of nutrition seems to be one of these. Within certain limitations we may take the weight of an infant as an indication of the state of its nutrition. Since, with the exception of the first group, the birth weight could only be ascertained in a few cases, I will here only cite striking differences.

In Group 1 the lowest values were obtained in Case 10, which in relation to its age shows decidedly the lowest weight. In Group 2, Case 6 holds the same position as Case 10, Group 1, and here, too, the values were low. In Group 4 are 3 infants, each 3 months of age, and the values are: Case 3, average weight, 5,100; 1 to 20, 99 per cent.; 1 to 40, 75 per cent. Case 10, weight, 3,290; 1 to 20, 40 per cent.; 1 to 40, 22 per cent. Case 11, weight, 2,780; 1 to 20, 60 per cent.; 1 to 40, 22 per cent. While in these cases the lowest weight does not coincide with the lowest values, nevertheless the greatest weight certainly is combined with the highest values.

But while we have cases indicating the state of nutrition as a factor in regard to the opsonic content of the blood of infants, there are other cases which do not show this influence very distinctly. Thus in Group 1 is Case 9, a case in which the infant, according to its weight and its clinical aspect, was in a very good state of nutrition. Nevertheless the values obtained in this case were relatively low. In Group 2, Case 9 gave low values, in spite of the good weight. In Group 3, Case 5 gave the lowest values, although the baby seemed to be well nourished. In Group 4, Case 4 gave relatively high values, although the infant's weight was low for its age. Therefore, it is probable that still other factors enter into consideration besides the state of nutrition as expressed in the weight of the baby.

Case 4, Group 2, may be taken as one of exudative diathesis. This disorder is supposed to represent a congenital abnormality of the constitution. Although it is not permissible to draw any conclusion from a single observation in a single case, nevertheless this observation may indicate a factor which may govern the opsonic content of the blood, a faulty constitution. Only in a few cases a reliable family history could be obtained, so that no information can be obtained in regard to possible hereditary influences on the opsonic content of the infant's blood. It must be left to further investigations whether the so-called inherited predisposition of the offspring, for instance, of parents suffering with tuberculosis may find a manifestation in the opsonic content of the child's blood.

The average values obtained in my cases exceed somewhat those obtained by Simon[4] in normal adults. Since Simon has shown that a longer period of abstinence from food tends to lower the opsonic content, a possibility exists that the more frequent feeding of infants may to some extent account for this observation. In Case 2, Group 2, the baby's weight was 3,135 gm., and the values recorded are for 1 to 20, 94 per cent., and for 1 to 40, 66 per cent. This baby had received the breast once within 48 hours, and that within the first 24 hours. It vomited promptly. The rest of the time it had been kept on water slightly sweetened with sugar. It was impossible to repeat the examination, so the possibility exists that the usual values may have been higher. Nevertheless it does not seem very probable that the influence of the fasting was a very marked one in this case. In Case 3, Group 1, the values which represent an infant of about the same age but of a higher weight were for 1 to 20, 98 per cent., and for 1 to 40, 84 per cent.

In the last column of the tables the values obtained for the dilution of 1 to 40 are expressed in the percentage of those obtained for 1 to 20. This calculation was omitted in cases in which the values for 1 to 20 were very low. In Group 1 this percentage was the lowest, where the absolute values were the lowest. In Group 2 the same holds good, with the exception of Case 6. In Group 3, Case 2 gave a phagocytosis of 64 per cent. for 1 to 20 and of 6 per cent. for 1 to 40. The value for 1 to 40, expressed in the percentage of that for 1 to 20, is 9 per cent., and this is the lowest value of this series. The difference is here very pronounced. In the other cases of this group the lowest value coincides with the lowest value for the phagocytosis. In Group 4, Case 1 is of interest. Here the absolute values differed markedly on two different examinations, while the percentage of the values for 1 to 40 in relation to those for 1 to 20 did not differ materially. Case 6 of this group corresponds to Case 2 of Group 3. The meaning of the values tabulated in the last column of the tables is not clear.

In summing up results, we must be careful in drawing conclusions from the data given. The dispensary material does not furnish an ideal material to reach final results, and the small number of cases in which the examinations could be repeated makes itself felt very disagreeably. Furthermore, it was impossible to obtain normal infants on which a series of observations covering a longer period of time could be taken, and such a series certainly is very desirable. Therefore, I offer these results only tentatively and more as a basis for further investigation.

Since the blood of normal individuals contains a certain amount of opsonins which are able to prepare a large number of different micro-organisms for phagocytosis, and since these opsonins seem of importance in the defense of the organism against various infections, it seems necessary to determine, if possible, the conditions which govern their amount in the blood of normal individuals. Keeping in mind the restriction mentioned above, the results may be summarized as follows:

1. The opsonic content of the infant's blood does not seen to follow the rules laid down by Moro[1] for the bactericidal power of the blood.

2. The average values for the opsonic content of the infant's blood exceed those laid down by Simon[4] for normal adults.

3. A distinct advantage seems to exist in favor of the breast-fed infant. This advantage does not seem to be dependent as much on the breast feeding as such, but it seems to be dependent to some extent on the state of the nutrition of the infant and perhaps on the constitution.[8]

8. In the Herter lectures delivered in Baltimore in October, 1906, Wright cited the results obtained in the Great Ormond Street Hospital, London, England. Seventy-two infants were examined with regard to their opsonic index for streptococci in order to determine the best time for the operation of cleft palate. It was found that the opsonic index was high (corresponding to that of the mother) during a certain time after birth; then a decided drop was noted with an increase later on. If my results are calculated with regard to the age solely the following results would be obtained: From birth to 1 month (10 observations), 1 to 20, 91 per cent., and 1 to 40, 67 per cent.; 1 month to 2 months (1 observation), 1 to 20, 48 per cent., and 1 to 40, 14 per cent.; 2 months to 3 months, 1 to 20, 45 per cent. (4 observations), 1 to 40, 22 per cent. (5 observations), 3 months to 4 months (6 observations), 1 to 20, 50 per cent., and 1 to 40, 26 per cent., 4 months to 5 months (5 observations), 1 to 20, 60 per cent., and 1 to 40, 31 per cent.; 6 months to 7 months (3 observations), 1 to 20, 71 per cent., and 1 to 40, 33 per cent. These results seem to bear out the observations made in the London Hospital. But with exception perhaps the first month the individual values of the different periods vary too much to permit the conclusion that the opsonic content is dependent on the age solely.

SUPERSTITION IN TERATOLOGY.

WITH SPECIAL REFERENCE TO THE THEORY OF IMPRESSIONISM.*

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Man has always and everywhere been the plaything of the supernatural, a helpless rodent under the cruel claws of the black cat of superstition. Now and then an individual has escaped from his tormentor, but for the vast hordes of humanity this has been impossible and continues so in varying degree in every inhabited portion of the globe to this day. To the whims and caprices of gods of its own making has mankind too easily been lead in the past to attribute every misfortune and every unusual natural phenomenon. No wonder, therefore, that the ancients often accounted in this way for the startling and sometimes hideous defects and deformities known to teratology.

ANCIENT TERATOGENIC THEORIES.

In the very earliest ages of the world it is probable that some of the terata were themselves deified, or were considered the progeny or at least the simulacra of the gods. Euhemerus was an ancient historian who accounted for the deities of Hellenic mythology by regarding "myths as traditional accounts of real incidents of human history." In this way euhemerism accounts for the teratologic appearance of many of the heathen gods and demi-gods, and we may, therefore, euhemerize Polyphemus into a cyclops fetus; the Centaur into a hydrocephalic calf; Atlas into a case of occipital encephalocele; Prometheus into a fetal exomphalos, etc.

Another theory held that monstrosities were created by the gods purely for their own amusement. This mud-pie theory is supposed to survive in such terms as "freak of Nature" and "sport" in botany.

But this theory soon gave way to the monitory or minatory theory which kept a very firm hold on the minds of men for many ages. Monsters were a divine warning or threat and called for the propitiation of the offended diety, whether heathen or Christian, and the deformed infant soon came to be regarded as the proper sacrificial or propitiatory offering to the displeased celestial magnate. Even the mother at times met the same fate as her defective child.

Another theory regarded the appearance of a monster as an awe-inspiring manifestation of the glory and power of God.

Ever since earliest Christian history many persons have looked on the birth of a monster as a penalty for sins committed, a gruesome anthropomorphism still rampant among the ultra pious everywhere.

Associated with the belief in the teratogenic power of the Deity was the idea that evil spirits also possessed this power, and Ballantyne declares that the history of the effects of this notion is so "full of sad, revolting, repulsive and almost incredible incidents that no good purpose can be served by lingering over it, this darkest fancy of the dark ages."

Since the very earliest times the moon and the stars and their changing positions in the sky have been looked on as teratogenic causes. Those ancient experts in divination, the Chaldeans, felt so proficient in their art that they considered it an easy matter to tell not only what stellar combinations caused certain monstrosities, but

* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

how the future in turn might be read by the appearance of monstrosities; that is, they lost "the supposed cause of the phenomenon in the supposed effect," and monsters became heralds or portends. This art of prophesying future events by the appearance of monstrosities is known as teratoscopy and was practiced very extensively in Mesopotamia 2,000 B.C., as is shown by remarkably well-preserved and well-executed teratoscopic tablets which have been unearthed by Assyriologists at Nineveh.

Belief in stellar influence on fetal development survived long after the fall of Babylon, and the abandonment of the special Chaldean horoscopic tables. In Alexandria, astrologers of the Second century made very specific claims in regard to the power of the moon, stars and planets as teratogenic factors; and the scholasticism of the middle ages was saturated with this belief. In the Seventeenth century a Danish philosopher ascribed monsters to comets which he regarded as celestial tumors that at times fell to the earth and assumed the shapes and forms of fetal monstrosities. The control which the moon was once supposed to exercise at times over the product of conception is preserved in the word "moon-calf," an embryo or fetus made monstrous through the influence of the moon.

But supernatural agencies were not the only powers invoked as teratogenic factors by the ancients. Because they knew nothing of the microscope, the existence of the ovum and the spermatozoa was unknown to them. In their defective embryology only the semen and the menses were regarded as factors in reproduction, but different writers credited them with possessing varying degrees of influence in reproduction and, therefore, also in teratogenesis. One view of the subject was enunciated by Aristotle as follows:

> The blood of the menses is the marble, the semen is the sculptor and the fetus is the statue.

With all these ancient teratogenic theories was associated another one, the hybrid theory, which regarded monsters as resulting from intercourse between different kinds of animals and between man and brutes. Not only the gods of Olympus but the humblest mortal might be the author of a half-man and half-brute; and it was not until the Eighteenth century that we find this theory seriously opposed.

THE IMPRESSION THEORY IN MODERN TEXT-BOOKS.

All the foregoing theories of the past have practically been abandoned, at least by modern physicians; but there still remains to be noticed another ancient theory, that of impressionism, which has been more fortunate in this regard, as its popularity has been maintained throughout all the centuries from the days of Jacob down to the present time. It is thus described by Ballantyne:[1]

> When reference is made to the maternal impression theory in teratogenesis, probably there is scarcely any one who thinks of it in any sense save in that old and extravagant one which demands belief in an absolute similarity between the thing producing the impression and defect or anomaly resulting therefrom.

The remainder of this paper is to be devoted to combating this superstition, and if an analogy be demanded for appearing before a body of Twentieth century scientific physicians with a formal attack on a popular superstition, it must be looked for in the lamentable fact that popular Twentieth century obstetric text-books written by highly respected Twentieth century obstetric authorities still defend and uphold this superstition.

1. "Antenatal Pathology and Hygiene."

The latest edition of a text-book written by a Philadelphia professor of obstetrics contains the following remarkable deliverance on this subject:

> Maternal impressions may affect the embryo or fetus. . . . There are well-authenticated cases of congenital defects or peculiarities which bear too startling a resemblance to the cause of the impression on the mother during pregnancy, to be dismissed as mere coincidences. One of my patients, less than six weeks pregnant, was on one occasion, seized by the ear and dragged about the room by her enraged husband. The child, born at term, had a triangular piece lacking from the lobe of the corresponding ear. . . . Profound impressions on the mother certainly influence the psychical development of the offspring. The idiocy of Barnaby Rudge, due to maternal shock and fright, is fiction founded on fact. The horror of King James at the sight of a naked sword may well have had its origin in the murder of Rizzio before the eyes of pregnant Queen Mary.

A text-book written by another Philadelphia professor of obstetrics contains the following iridescent gem on this subject:

> There is certainly more than mere coincidence in the fact of fright and shock and the subsequent malformation or marking of the fetus. The well-known "elephant man" of England and the "turtle man" exhibited in the United States, with other instances, are familiar evidences of this anomaly.

In the text-book of a New York professor of obstetrics we find the following ebulition of sewing-circle science:

> There is no doubt that the mental state (of the expectant mother) may be the cause of modification in the physical, the intellectual and the moral charcteristics of her offspring.

Here is the illumination thrown on this question by another New York professor of obstetrics in his text-book:

> Instances pointing to the connection between, or dependence of, congenital deformities, both physical and mental, on maternal impressions are too numerous to be completely dismissed as coincidences.

In view of the fact that the maternal impression theory is only seldom called into question and seems to be considered by eminent obstetric authorities fully adequate to account for any physical or psychic defects which may appear in the new-born child, or may even develop in later years, is it any wonder that our popular magazines and journals contain at times serio-comic articles by lay writers, overflowing with advice and suggestion for the expectant mother? So confident and so specific are their directions that too often the mother is led to believe that she has it easily within her power during pregnancy to mold very accurately the tastes, disposition, character, physical development, and intellectual endowments of her unborn offspring.

THE IMPRESSION THEORY COMBATED.

The maternal impressionist has but one argument with which to bolster up his position, the *post hoc ergo propter hoc* argument. A shock or fright is experienced by a pregnant woman; her child is born with a defect which, to a more or less powerful imagination, is found to resemble in some way the cause of the maternal shock or fright; therefore the unpleasant incident caused the "mark."

To the unscientific mind such reasoning seems fully admissible. By such a mind the thousands of occasions on which expected "marks" fail to appear in spite of profound maternal shock during pregnancy are forgotten; and the hundreds of cases in which "marks" do occur, but in which the mother can recall no event or shock to which she can attribute the "mark," are totally ignored. When, however, in the case of some unstable,

neurotic woman, a coincidence of maternal shock and fetal mark or defect does occur, the impressionist mind can see only a case of cause and effect.

But perhaps physicians are somewhat excusable for not questioning the validity of such reasoning. Possibly the pall of empiricism has rested on the medical mind for so many centuries that it can not be lightly thrown off. At all events, the character of some of the literature contributed to medical journals would seem to indicate as much. A doctor uses a certain therapeutic measure a few times; his patients get well, and, lo, a valuable discovery in therapeutics is promptly heralded! *Vis medicatrix naturæ?* Not on your life!

As a worthy example for not a few modern obstetricians who are still laboring under the thraldom of an irrational empiricism, let us point to Blondel of England who, nearly two centuries ago was sufficiently brave and enlightened to declare:

> There are so many odds against the imagination theory, that the cases related in its favor can never overbalance those which are against it. They may be compared to an accidental hit of a dream, or the predictions of a fortune teller, which now and then are accomplished.

How can the maternal impression theory account for the occurrence of the innumerable congenital anatomic anomalies found in every dissecting room in organs and structures of which the mother is usually entirely ignorant? Knowing as we do how totally depraved some beings may become, how can we explain, if the truth of the impression theory be granted, the absence of "farms" for the production of human monstrosities for exhibition purposes?

Ballantyne summarizes his views on the causation of monstrosities as follows:

> They are the result of disorderly embryology, of disturbed ontogenesis and organogenesis. Many of them are arrested developments and represent stages which ought to have been temporary in ontogenesis, but which have remained stationary while other and neighboring parts were pursuing the path of normal development. In the case of some of them, at least, the amnion would seem to act by pressure, and so delay, or altogether stop, the progress of events in ontogenesis. The amniotic influence, in its turn, may be the result of the action of toxins, poisons and mechanical states which delay the formation of the amnion; or possibly these substances and states may act directly on the embryo and alter its nutrition, and consequently its development and growth.
>
> Other monstrosities, and more particularly those by excess and double terata, may be due to morbid causes acting on the blastoderm before embryonic life begins, or on the ova and the spermatazoa before or during impregnation. On the other hand there are minor monstrosities or malformations which may, perhaps, be produced in the fetal period by the action of intrauterine pressure, or external traumatism; for it must be remembered that certain parts of the organism are still in the formative or embryonic stage, although the organism, as a whole, has passed into the fetal phase. Finally, it is not impossible that the same ultimate causes may be active in all the three periods of antenatal life, although the results are so strikingly different. In all this there is much that is uncertain, obscure, dark; but perhaps
>
> A light
> Will struggle through these thronging words at last.

Teratologists have found that there is not a single malformation known to the human species that has not a corresponding malformation in the lower animals, both wild and domesticated. Malformations also occur among birds, reptiles and fishes, and even in crustaceans and in insects. Analogous malformations also appear in the vegetable kingdom where single and double monsters abound, developments which result from arrested, defective or excessive formative energy, and which even a New York or a Philadelphia professor of obstetrics might hesitate to ascribe to the influence of maternal impressions.

The unfortunate structural aberrations found in teratology originate very early in intrauterine development. Consequently, when a deformity or malformation occurs it often happens before the woman is aware of her condition and practically always long before the maternal mental impression to which the abnormality is ascribed takes place.

RELATION BETWEEN MOTHER AND FETUS ONE OF CONTIGUITY, NOT OF CONTINUITY.

If anatomists may be believed, the relation between mother and fetus is never one of continuity, but only one of contiguity; for immediately on the maturing of the human ovum and its expulsion from the Graafian follicle, the solution of continuity becomes complete and remains so even though fecundation occur and the ovum be anchored to the womb for future growth and development. The physiologic relationship between mother and embryo is so feeble that were it not for the practical difficulties involved, an impregnated human ovum might be transferred from one womb to another without interrupting the growth of the embryo, as has already been done in the case of some of the lower animals.

Later, when the placenta appears, Nature establishes a membranous barrier between the blood of the mother and the blood of the fetus through which communication can occur only by means of osmosis; and in order, apparently, to make the product of conception doubly secure against dangerous maternal nervous shocks or influences, no connection at any time exists between the nervous system of the mother and that of the fetus, not even one of contiguity, as both the cord and the placenta are devoid of nerves.

A maternal nerve force, in order to reach the nervous system of the fetus, would consequently be compelled to leap across a vast nerveless chasm—surely a preposterous assumption. Indeed, the setting hen, patiently hatching her chicks, is physiologically no more separated from her chicks than is the mother from her unborn child. The mother supplies her expected offspring with heat, nourishment and an abiding place; the hen does no less. If maternral impressions can be transmitted in the one case, they can also be transmitted in the other. What is it that saves the mother's own tissues, in immediate contact with her nervous system, from meeting at times with the grave structural catastrophies which her marvelously potential nervous organism is said to inflict on her unborn child? Why is it that the psychic dynamics called forth by the sight of a rat or a neighborhood fire never produce an angioma on the body of the expectant mother?

While Nature is never charitable or forgiving, she is also never unjust; therefore, it is not likely that she gives the female parent any greater power to determine the character and constitution of the offspring than she gives the male parent. If it were otherwise, the influence of the father on his child would be largely subservient to the excessive nervous and mental impressionability of the mother during pregnancy. This would be unfair to both parents and to the child, and is therefore probably untrue.

Should the contention be made that fetal defects might at times result from the same forces which are called into activity during a display of the phenomena

of hypnotism or of telepathy by their being involuntarily projected by the mother into her unborn child, it may be met by the statement that the exercise of the power of hypnotism usually presupposes the conscious action of the will of the operator and at least the "subconscious," if not the conscious, submission of the will of the one operated on. Even conceding the correctness of the violent assumption of the mother's competency as an operator in hypnotism or telepathy, how can we admit the existence of voluntary submissive powers, even the most subliminal, in a being that has not yet crossed the threshold of conscious existence?

BALEFUL EFFECTS OF THE IMPRESSION THEORY.

Practically all modern obstetric text-books contain the latest important findings in regard to the development of the embryo and fetus; their authors seem to understand the subject thoroughly. This same knowledge has long since led teratologists to lose all faith in impressionism, but, curiously enough, no such effect has been noted in the case of certain obstetric authors who seem unable to cast off this moldy old belief of the fathers, the grandfathers, and the grandmothers.

One of the baleful effects of the prevalence of this belief among medical men, as pointed out by Ballantyne, is the influence which it has on the study of teratology. Cases of congenital deformity which should receive careful, scientific investigation afford only an excuse for idle speculation concerning the kind of mental processes the mother must have experienced in order to produce a certain fetal accident; or the reporter sees nothing in a so-called mark but a fanciful resemblance to some animal, fruit, vegetable or other object.

In view of the fact that underestimation of our excellence in every department of human knowledge and achievement has never been a very conspicuous trait among us as a nation, it is not surprising that European scientists can very poorly disguise their astonishment or suppress their ridicule at the prevalence of a belief in the theory of maternal impressions among some of the leaders of American medicine.

Indeed this state of affairs ought to be the source of the keenest chagrin throughout the profession in this country; and the medical pew should demand so loudly and so urgently of the medical pulpit that it cease to preach this impossible dogma in order that the absurdity may soon be banished from our obstetric text-books and be relegated to the lumber-room long since prepared for child-bed fever, the prophylactic buckeye and pow-wowing.

Are not the burdens, apprehensions, and indispositions of the average sensitive, expectant mother already great enough without our making her wrongfully believe that she must also assume the awful, crushing responsibilities entailed by belief in the theory of impressionism?

Surely, the constant aim of friends and accoucheur should be to smooth her way wherever possible, to guard her diligently against the real and the fancied pitfalls of expectant motherhood, and, last of all, to make the racking culmination of her waiting season as safe and bearable as may be. But such a tolerable estate can not be hers if superstition's ugly form be suffered to beset her every step and to threaten her awaited babe with hideous marks and shapes. 'Tis true that mishaps, such as these, do now and then occur; but when one does appear, the broken-hearted mother should promptly be assured that such a calamity can never be ascribed, with truth, to fancy, fright, or fear. To be the mother of an ill-shaped child is harrowing enough without the heartless, unjust charge that she herself, perchance, is most to blame for her misfortune and her babe's.

Grievously to deplore the fact that we ourselves are most to blame for the tenacity with which this medievalism still holds sway throughout our land, is well: but that is not enough. Led by men like Piersol, Cooke and Bacon; like Woodruff and DeLee, no earnest member in our ranks should hesitate to help with righteous zeal to dissipate this gross anachronism, this hideous specter of a cruel, barbarous, superstitious past.

FOR THE DISCUSSION, SEE PAGE 363.

THERAPEUTIC USES AND DANGERS OF THE ROENTGEN RAYS.*

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The value and power of therapeutic agents and methods are determined by the results obtained by those competent to use them. Judged by this standard, the Roentgen rays have established their value as a powerful therapeutic agent. A distinction must always be made in judging results between deficiencies in the method and defects in the technic of its employment. As a therapeutic agent, the rays have proved themselves to be potent stimulants, alteratives and even destroyers of tissue. They produce results, that can not otherwise be obtained, by influencing metabolism. They stop pathologic processes, cause the absorption of pathologic tissue, stimulate normal processes of growth and repair and restore the tissues to their normal state.

These effects were first recognized by their injurious action, but their therapeutic value has been carefully studied and determined. Efficient methods have been developed for guarding against their injurious effect, while a breadth of therapeutic application has been found that is only limited by the technic of their use. They influence the general processes of nutrition and metabolism by their action on the trophic nerves, the blood vessels, and, apparently, by a direct action on the cells themselves. Not only is the field of usefulness wide because of this systemic action, but it is also varied because of the complex character of the agent, its effects varying widely with the quality and quantity that is employed.

The physiology of its action is so complex that any attempt at accurate explanation is impossible. It can only be judged by its results, like many other remedial agents. Its explanation is intimately bound up with the complex problems of biology and the unexplained forces of electricity.

More accurate knowledge can be expected when the function of the ion, in biology and in the chemical processes of metabolism, is understood. Science is tending that way by the recognition of the radiant property of matter, the part played by the ion and electric charges in chemical combinations; the varying effects produced by the cat-ions and an-ions in the chemistry of biology and physiology.

These discoveries followed to their logical conclusions must sooner or later explain the rôle played by the radiant energy of the ions, if they be ions, that proceed from the Roentgen tube and produce such marvelous clinical results. Whether these ions act directly on the cell,

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

combining with those in its composition, or only act by stimulating metabolic processes or by developing antiferments in the tissues, it is impossible to determine.

To appreciate the logical rationale of the application of this remedy to so many and varied conditions, and also the reason why such a great diversity in results can be obtained, the complex character of the Roentgen radiations must be more clearly understood.

The qualities of the ray are commonly subdivided into groups depending on their power of penetration and with it their variation in therapeutic effect. There is, however, no common agreement as to these subdivisions, and there can not well be, as there are many rays of varying quality in every bundle proceeding from a tube, and each quality is roughly recognized by the preponderant number of rays in a given bundle. The composite is, therefore, recognized by the more prominent quality. These qualities vary from rays that do not penetrate appreciably to those that know no obstruction. The therapeutic action of the rays is apparently dependent on this varying power of penetration for its variations in quality, as their effect is apparently in proportion to the amount of the bundle of rays absorbed in the diseased area. Thus the most effective rays in treating skin and superficial lesions are those of low penetration that are absorbed in the skin. The more completely they are absorbed in the superficial tissues the less danger will there be of atrophy, telangiectases and other late injury of the skin, which can generally be avoided by these refinements in technic. On the other hand, in treating sarcoma rays of higher penetrating power must be employed to be most effective, as the tissues are dense, difficult to penetrate and absorb rays of even high penetrating power. Thus the quality must be adapted so that the rays will be absorbed by the pathologic tissues.

The therapeutic effect varies also with the quantity or volume of rays employed, again adding to the complexity, stimulant, alterative or destructive effects being produced by the same quality depending on the quantity and method of application. For example, in a case of alopecia areata, in which the hair follicles have not been destroyed, mild doses will stimulate the renewed growth of hair; stronger doses, in quantity, will cause any remaining hair to fall out injuring the nutrition of the hair follicle; while a still stronger dose would destroy the hair follicles and the skin with them. All these varied actions have their appropriate fields of application to be determined by clinical experience.

The Roentgen therapeutist is therefore dealing with a most complex and powerful agent that can be most harmful when ignorantly employed, stimulating the pathologic process instead of retarding it, or destroying normal tissues when stimulation only is needed. Its complex character and varying effects, due to qualities and quantities difficult to measure, make its effective employment most difficult, especially as these varying factors must be governed by the therapeutist in producing this agent while he is employing it. Special technic is demanded to employ the apparatus to produce this agent, to recognize the qualities and to measure the quantity. Clinical experience is essential to adapt the qualities to the individual patient, and to recognize the effect and vary the technic to suit the case.

There are a number of known factors that can be approximately measured, any of which if altered vary the effect produced.

Like all light waves, the Roentgen rays vary in their intensity inversely as the square of the distance from their source. The distance of the tube from the patient is, therefore, a factor in determining the strength of the dose; it also varies in an appreciable degree the physiologic effects. The length of the exposure is also a variable factor one long exposure producing an entirely different effect from the same length in time, given in repeated doses, while a cumulative action can be produced by repeated exposures of sufficient strength. Thus the number of treatments a week is another factor. These are the variable factors outside the tube. The quality and quantity of rays given off by the tube are the most difficult factors to measure. The resistance of the tube and of the secondary circuit, as measured by a parallel spark in air is a relative measure of the quality of the rays, since the penetrating power varies in a ratio proportionate to this factor. The volume of current passing through the tube varies, however, inversely with the resistance, so that the quantity of rays given off is difficult to measure.

Various penetrometers have been devised for measuring the penetrating power of the rays, while a milliamperemeter in the secondary circuit measures the amount of current passing through it, and gives a valuable relative measure of the quantity of rays produced.

Many devices and methods for measuring the chemical effect of the rays or their ionizing effect during a treatment have been advocated. These are inaccurate measurements of the physiologic effect, as the ratio of chemical and physiologic action has not been determined and is not even known to be proportionate.

I[1] have adopted and described a method of approximately measuring and writing the dose employed in terms of measurements that can be readily made. Though not absolutely accurate, it gives a working method by which clinical results and their method of production can be recorded and compared by various workers. The same method was advocated by Walter of Hamburg at the International Roentgen Congress, 1905, and received hearty support.

By this method the dose can be written in a seemingly algebraic formula or equation, X (the dose) = 10m., 8″, 2″ g, 2 ma. 8B. This means a ten-minute treatment, with the platinum of the tube eight inches distant from the patient and a vacuum equivalent to two inches of air in a parallel spark gap, with two milliamperes of current in the secondary circuit and a degree of penetration equal to No. 5 of the Benoist scale.

Any variation in any one of these factors produces a marked variation in the quality or quantity of the dose. Any one of these factors might have to be varied to suit the dose to the individual case, while different effects would be produced according to the frequency of its application. As illustrative cases of sharp contrast let us compare the treatment of a grave case of malignant disease, threatening the life of the patient, and one of pustular acne.

Malignant disease must be attacked with as great severity as the patient's physical condition will permit. The full physiologic effect of the Roentgen rays must be used. The quality would depend on the nature and situation of the growth. The quantity would only be limited by the toleration of the patient. A carcinoma of the face or neck threatening the life of the patient must have heroic treatment. Rays that would penetrate and be absorbed would be used with the tube close to the patient and giving out a large volume of rays. The treatments would be given daily with a massive and

1. American Medicine, Dec. 3, 1904.

cumulative effect to produce necrosis of the diseased tissues. A complete cessation of treatment would follow the appearance of the dermatitis while the patient would be kept under observation and the toxic condition resulting from increased metabolism carefully watched and combated. This dose would be repeated till all malignant tissue had been destroyed and then light stimulant treatment would be employed to hasten the healing. The successes achieved in apparently hopeless cases have been due to such energetic treatment, not necessarily so severe. The dermatitis and even necrosis are nothing compared with the fatal result that would otherwise follow.

A severe or painful dermatitis is not necessary if patients are brought in time. With proper dosage the dermatitis is seldom severe, and then only in malignant disease in which a proportionate benefit always follows.

Severe cases, however, demand severe measures. Salivation is of little moment in tertiary syphilis, if by its production the patient's life has been saved. It is useless in any grave condition to expect to produce beneficial effects unless the remedy or drug employed is made to produce its full physiologic effect.

The contrasting case of pustular acne must be treated differently as the indications for treatment are principally cosmetic. The skin must be carefully guarded against a dermatitis. A mild stimulant and locally alterative action is all that should be produced. The rays must all be absorbed in the superficial tissues to prevent injury to the deeper structures of the skin and resulting deformity. Rays of low penetration in moderate volume suffice to produce absorption and healing without scar formation.

These variations in the technic of treatment are as numerous as the diseases treated. A mastery of this technic founded on wide clinical experience and a realization of the varied physiologic effects produced by the variations are essential to the production of valuable and reliable results.

An absence of this essential knowledge for the effective application of this complex powerful physical therapeutic agent is an easy explanation for many of the failures to produce results prominently reported.

An examination of some of the cases reported will show that they have been treated by assistants of the reporter, since his prominence in other fields of medicine makes it self-evident that he could not personally have given them the necessary time. This is one of the lesser causes of failure, for a graver danger and certain cause of failure in diagnosis and treatment is the unskilled non-medical assistant who runs the *x*-ray machine as well as the dynamo in some hospitals.

The complexity of this therapeutic agent makes it impossible for the physician to prescribe the dose and to get valuable results through the medium of an assistant. He can be assisted in giving the treatments, but only personal knowledge and clinical experience in observing physiologic effects, when personally employed for the benefit of the patient under his own eye, can secure the most beneficial results.

Inexperience can be noted in the reports of those writers who expect results that could be obtained only by a miracle. The Roentgen ray method is not Christian science. Definite physiologic effects are to be produced and they can only be obtained by sufficient dosage applied often enough to be effective. The stimulation of absorption, of retrograde metamorphosis, of reconstruction and, in fact, any natural physiologic process demands time for its accomplishment. Growth is slow and yet its stimulation must be sufficiently frequent to produce results. This remedial agent acts like any other on the tissues and demands time. The number of treatments often reported as ineffective are insufficient for the gravity of the case and undoubtedly were not given in sufficient strength to produce the necessary physiologic action. In cases in which apparent stimulation of malignant growth has been reported it undoubtedly took place because the rays were employed with a half-hearted timidity that resulted in stimulation. This is one of the grave dangers of Roentgen ray therapy that it is often, through ignorance, employed in a dose that stimulates malignant disease, while a sense of security that is false keeps the patient from adopting operative measures that would be of benefit.

None but cases of superficial malignant disease, as epitheliomas and rodent ulcers, should submit primarily and solely to Roentgen treatment. All other cases should be submitted to early operative removal of the malignant tissue, followed by immediate postoperative Roentgen treatment. Surgical operation and Roentgen treatment are mutually beneficial and supplementary. The removal of the mass of pathologic cells lessens the amount of absorption and the consequent danger of severe toxemia following Roentgen treatment. This toxemia or autointoxication is one of the gravest dangers and greatest difficulties in treatment. It is an evidence but not an essential of effective treatment and is also an indication for its temporary suspension. Operation in sarcoma or atrophic scirrhus is not advised since Roentgen treatment has been most effective in cases not operated on and there is less liability to metastasis.

The Roentgen treatment is undoubtedly beneficial to surgical intervention in malignant disease. In a recent paper the difficulties encountered in operating after Roentgen treatment were discussed. The pathologist's report of the case discussed and the opinions of the surgeons participating in the debate all agreed that the lymph channels were found converted into solid cords that made operation difficult. This result was produced by 28 treatments. What more could be desired; the avenues of infection were closed. If this result can be secured after operation by so short a course of treatment the Roentgen ray is of the greatest value as an adjunct of surgical operation.

While the field of successful therapeutic application of the Roentgen rays is ever widening, it undoubtedly has its limitations, it produces regular physiologic actions and can no longer be considered a miracle worker.

In hopeless malignant cases from the surgical standpoint the patients are sent for Roentgen treatment. Palliation is all that can be expected, and the patient or some member of the family should be told so. These patients should not be deluded by a false hope and their deaths laid to inefficient treatment by the Roentgen rays. They are too frequently told they will be cured by operation when the known mortality is proof to the contrary. Surgery is not a certain cure for malignant disease. Instead of consigning these individuals to a fancied security from which a rude awakening is almost certain, they should be advised to employ all means that will guard against recurrence. This truth is not so cruel as an awakening when it is too late. They should be sent immediately after operation for a course of Roentgen treatment to destroy any minute foci that remain after the operation and for the effect on the lymphatic channels. The Roentgen method has demonstrated its po-

tency in inoperable recurrences and apparently hopeless cases. It should be given the opportunity to benefit patients when there is a possibility.

The dangers that accompany the employment of the powerful agent have been minimized and can practically be excluded in the hands of competent therapeutists. The dermatitis produced in therapy is always within limits and is never serious, unless the severity of the condition treated demands severe measures, and the benefit to be derived is proportionately great. Intelligent individuals and physicians in particular should not speak of *x*-ray "burns" as necessary or common in Roentgen treatments. There is a vast difference between the acute necrosis produced by an overdose of powerful *x*-rays in an attempt to take a picture by a novice and the progressive tanning of the skin by carefully adapted dosage in Roentgen therapy; a difference as great as that between the actual cautery and a mustard plaster, both of which have their place and uses in therapy and neither of which should be entrusted to the unskilled.

The increased metabolism which has been demonstrated as a result of Roentgen treatment is not a danger in skilful hands, but a great power for good and a valuable therapeutic force.

The gravest danger from the Roentgen rays lies in their promiscuous employment by those who have not been taught their use or the knowledge of their physiologic action and therapeutic effects.

The production and application of the Roentgen rays as diagnostic and therapeutic agents should be taught to medical students by practical laboratory and clinical courses. Their employment on the human subject for diagnostic or therapeutic purposes should be limited to qualified practitioners, that is to those licensed by state boards to practice medicine and dental surgery.

Action to this effect has been taken by recognized bodies of medical men in Vienna, in Berlin and in Paris, by the German Roentgen Society and by the Academy of Medicine in Paris.

THE ROENTGEN RAYS IN SUPERFICIAL LESIONS.*

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The Roentgen rays, as a therapeutic agent in the treatment of superficial lesions, has attained an important place. The lesions which have been successfully treated are varied. This is accounted for by a careful study of the physical properties and the physiologic action of the rays. No therapeutic agent should ever be employed without first studying its physiologic action and the amount necessary to produce the desired effect. In order to appreciate the value of the agent it is necessary to understand that the rays are not all of uniform energy and that those given off by a low and a high tube have a very different action on tissue. For instance, a light which is most efficient in acne, would be useless in the treatment of tuberculous adenitis.

In a general way the vacuum might be subdivided into five degrees for the treatment of the various diseases, ranging from a point where the tube is so low that the rays have very little penetration, but are very rich chemically, to a vacuum where the rays have great penetration, traveling several hundred feet from the tube, and are not rich chemically. One of the greatest drawbacks to the progress of radiotherapy in the past has been the careless and inaccurate application of the rays, little attention being given to the degree of vacuum, tube distance and exciting energy. There is not a drug in the Pharmacopeia which is more powerful, more flexible, or more efficient when properly prescribed, nor more dangerous when used carelessly.

One of the frequent remarks heard is: "I always give a small dose to be on the safe side." Now, is there anything more ridiculous than a physician employing an agent about which he knows practically nothing, or is afraid to give the required dose to produce the necessary physiologic action? Then, when the patient does not improve, the agent is deemed inadequate when the operator is merely incompetent. If strychnia or digitalis were employed without producing their full physiologic action, the failure would not be blamed on the drug. Any graduate of medicine can do surgery, but unless he has had experience and judgment he can not secure good results, and yet when he graduates from college he is better prepared to do surgery than to do radiotherapy.

One should understand the action of the rays, know the tissues first affected, what changes take place, and the exact process of repair. Then the operator is able to determine the disease in which the *x*-ray may be expected to be beneficial or harmful. Any haphazard use of the rays should be condemned.

That the Roentgen rays have a selective action on epithelial cells should no longer be questioned. Therefore, the tissues composed of epithelial cells will be acted on long before the surrounding structures are affected, and this explains how a chain of lymphatic glands will undergo a degeneration with almost an entire obliteration without seriously influencing the surrounding tissues. All tissues which have undergone pathologic changes react more quickly and intensely.

The editor of the *Archives of Roentgen Rays* sums up the physiologic action of the rays as follows:

> The activity of development of the cellular constituents of a part and the amount of cellular proliferation modify the reaction. The more active the cellular proliferation, the more readily do the cells respond to irradiation.
>
> The stage of maturity to which the cells have attained has a decided influence on the cellular reaction. In the case of epithelial and endothelial cells it has been found both experimentally and clinically that cells that are fully matured react less readily than those still in the process of development. In the case of lymphocytes and leucocytes, degenerative changes are advanced by full maturity, while arrest of development and retrogressive changes are the lot of the immature.
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> That the nature of the cells produced has a modifying influence on the reaction has been too repeatedly pointed out to be here dwelt on. The only appreciable result of irradiation on the red-blood corpuscles is a decrease in their physical resistance; no alteration in the hemoglobin has yet been established. The white cells, on the other hand, are very susceptible to irradiation; the leucocytes show marked degenerative changes, mainly in the direction of the fragmentation of the nucleus. The protoplasm of the cells, more particularly of the polynuclear variety, undergo a degenerative change, being broken up into small masses, which refuse to stain or stain badly. This plainly shows that their evolution is hastened.
>
> The epithelial cells of the body, both cutaneous and parenchymatous, are affected in proportion to their vitality. . . . The more embryonic forms of cells are more easily affected, a retardation in development preceding degenerative metamorphosis. Where healthy structures are exposed to the action of the rays, the primary changes of degeneration and destruction of the epithelial cells have been found to precede proliferation of the connective tissue, the vascular changes being a late manifes-

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

tation of irradiation. The destruction of the Malpighian corpuscles and cellular elements in the spleen, as noted by Heinecke, is a well-known illustration of the influence of irradiation on the organs built up of lymphatic tissues.

In applying the rays it is hardly necessary to state that the severity of reaction can be varied from a mild erythema to a necrosis, according to the kind and amount of energy absorbed. With a modern apparatus it is possible to regulate the dose to produce the desired effect with a great deal of accuracy and to avoid accidental dermatitis with a degree of certainty.

The biologic action of the Roentgen ray on superficial diseases has been summed up as follows:

1. Stimulation of the tissues in atrophic conditions—affections like alopecia areata. Here caution must be used not to get more than stimulation.
2. Alterations of metabolism, such as eczema, psoriasis or any other of the indurated inflammatory skin diseases in which it is necessary to cause absorption of the inflammatory products.
3. Atrophy of the skin and its appendages—affections like acne, where it is necessary to decrease the size or functional activity of the sebaceous gland or the sweat glands, as in hyperidrosis.
4. Destruction of the microbes in living tissues—lupus vulgaris, etc.
5. Destruction of certain pathologic formations—tuberculous adenditis and overgrowths, as in goiter.

ALOPECIA AREATA.

The most efficient treatment of alopecia has always consisted in the application of slightly irritating drugs, which stimulate the function of the papilla and surrounding tissues. Drugs have a very superficial action and often prove useless. Stimulation can be produced by the Roentgen rays, which penetrate deeply, and have proved efficient when the other remedies have failed. In this connection I will report the following case:

Miss M., referred by Dr. Jackson, had alopecia areata for two years, and was apparently cured by stimulating medication. When it recurred she was referred for *x*-ray treatment. Ten exposures of the Roentgen rays apparently cured the disease and the good result has persisted.

PSORIASIS.

Many favorable results have been reported, as well as a few failures. The reports of the various operators are not very uniform in this obstinate disease, which is undoubtedly due to the technic, as one will report that only the mildest form of treatment is required, while another will advocate intense radiation. The treatment usually requires a considerable length of time, as it often covers large surfaces and has a great tendency to recur. I have treated four cases with Roentgen ray and the average time in three cases in which an apparent cure was produced covered six months. These were among twelve or more cases treated by various methods. It certainly requires perseverance on the part of the patient and the doctor in order to effect a cure in the chronic cases.

We should not use the Roentgen rays in all the milder cases of psorasis without first trying the other remedies, not because the rays are not efficient, but because the treatment is not so irksome.

Mr. G., aged 44, had psoriasis for eighteen years, and during this time he had learned that he could treat himself with chrysarobin, as well as could any physician. He had tried almost all the remedies ever used for the treatment of psoriasis. The disease covered the greater portion of the body. Treatment was given three times a week for three months and then irregularly for six months, when all the lesions had disappeared. During this time, seventy-eight treatments were given. It is now eighteen months since the last treatment was given and there has been no recurrence of the disease. No drugs were used nor was any other treatment taken during this time.

ECZEMA.

Some cases of chronic eczema have responded to the Roentgen rays, while in others the treatment was not efficient. The classes of cases mostly benefited are those in which there was inflammatory exudate and the stimulation of the rays caused the absorption of the exudate. The rays should not be employed when the disease is caused by an irritant or when there is a systemic derangement, until these causes have been remedied. If the treatment will do nothing more it nearly always relieves the itching for the time being. In this connection I will report the following case:

Mr. D., aged 55, had suffered with squamous eczema of the face for ten years. The skin was thickened and the glands under the chin were enlarged. All other treatment had only alleviated the symptoms. Twenty treatments caused a disappearance of the disease.

KELOIDS.

The treatment of keloids by the Roentgen rays has been more successful than any other method up to the present time. At the last meeting of the American Roentgen Ray Society, a paper on keloids was read, and the author and those discussing the subject mentioned thirty-one cases in which the rays had been employed successfully. It has been shown that it requires considerable time to cure keloids, and that rays should be employed of such a character as to stimulate normal tissue processes and to promote absorption. A ray which would be destructive if given in large doses, as in the treatment of carcinoma or tuberculous glands, would not be efficient. This certainly accounts for failures in the past. Several operators have advocated the removal surgically, and then the administration of a course of treatment to prevent recurrence. Usually this does not seem necessary. Among the cases of this condition is the following:

Mr. B., aged 27, was referred by Dr. Morgan for treatment after a keloid of the cheek had been twice removed and each time promptly recurred. *X*-ray treatment was given three times a week for three months and then a few irregular treatments during the next two months, when the lesion had entirely disappeared.

ACNE.

Radiotherapy is unquestionably a valuable agent in the treatment of acne. Excellent results have been obtained in many obstinate cases which resisted all other methods. Acne vulgaris yields to the treatment much more readily than acne rosacea, but by persistent treatment good results have been secured in the latter condition. Sometimes it is surprising how quickly pustular acne will disappear under the influence of the rays given off by a very low tube. I have had the best results when a mild degree of dermatitis has been produced, but I do not believe that there is any other skin disease in which the operator should be more careful not to produce too severe a dermatitis, for in that case the skin becomes tanned and wrinkled. The dose of the rays in acne depends on the condition of the patient and the severity of the disease. I believe that nearly all the failures are due to faulty technic.

The following case of pustular acne was referred by Dr. Kerr after the patient had been treated with the usual remedies without benefit:

Miss W., aged 23, had pustular acne for twelve years, and had been little benefited by any treatment. *X*-ray treatment for three months caused a complete disappearance of the disease. It is now two years since the last treatment was given and there has been no recurrence.

Many similar cases would serve to illustrate the same course of recovery.

TINEA AND FAVUS.

In tinea and favus the Roentgen ray has proved a useful epilating agent. By proper radiation more or less complete epilation can be secured, and with this a complete disappearance of the foci of infection. Care must be exercised not to cause permanent alopecia. In many places in Europe sufficient rays are applied at one séance to complete epilation, but I believe that it is safer to give this dose in eight or ten sittings. The hair usually falls out in from fifteen to twenty days after the treatment. The scalp then should be treated by the usual methods such as washing with naphtol soap, or daily application of a 20 per cent. iodin solution. Regrowth of the hair usually begins in from six to eight weeks.

In the treatment of tinea tonsurans and favus, Sabouraud concludes that both diseases are amenable to the Roentgen treatment, which lasts weeks only, in place of years, as under the old method. Radiotherapy has been successful in this manner in sycosis. The following case will illustrate this group:

Mr. C., referred by Dr. Miller, had sycosis involving the right eyebrow and part of the beard. There were two large infiltrated patches about the size of a dollar, and another somewhat smaller. During this time the disease had been very resistant to treatment. After eight exposures to the Roentgen rays, marked improvement was noticed and in two months the disease was apparently cured.

TUBERCULOUS ADENTITIS.

In the treatment of tuberculous glands, the results obtained by the use of Roentgen rays will compare favorably with those from any other method, as a large proportion of the patients can be apparently cured. The treatment usually requires about three months, at the end of which the glands have undergone a degeneration, leaving a hard fibrous nodule, which, as a rule, never gives any further trouble. The radiation must necessarily be intense with the tube placed at least 12 inches from the surface, in order to influence the whole of the diseased area. The important part of the treatment is to have a tube placed the proper distance, giving off rays, rich chemically, and with the proper degree of penetration.

Miss B., aged 18, referred for *x*-ray treatment, had been operated on six months previously and when she came a very unfavorable prognosis was given. There was a glandular mass in the right side of the neck extending from the ear almost to the clavicle. There were two masses about the size of a hen's egg. It was with difficulty that the patient could move her neck and she was very much emaciated. After nine treatments she became comfortable and began to improve in general health, while the glands began to reduce in size. Sixty treatments were given in six months, when all the smaller glands had disappeared and the two larger masses were reduced to about the size of a hickory nut, hard and freely movable. Treatment was then discontinued, and two months ago, one year after the last treatment, this patient was in about the same condition.

Now the question arises, in the cases in which these hard nodules are left, whether it is advisable to have them removed or not.

No further attempt should be made with the *x*-rays, as the epithelial tissue, which is easily influenced by the rays, has undergone a fatty degeneration. The fatty substance is absorbed, leaving the fibrous stroma. I believe that these should be left alone and watched carefully.

GOITER.

Many cases of goiter have been greatly benefited by the Roentgen rays. This is what should be expected from the structure of the thyroid gland after a careful study of the physiologic action of the rays. A certain few cases of goiter which resisted other forms of treatment have responded readily to the rays. The treatment will usually relieve the annoying symptoms, reduce the size of the gland, and in some instances apparently cure the patient. It can hardly be expected to reduce the size of the gland to normal when there is immense tumor. The rays most likely reduce the gland by fibrous degeneration. This requires intense radiation, with the tube placed at least 12 or 15 inches from the surface of the skin.

Many cases would serve to illustrate the benefit derived from the Roentgen rays after other remedies had proved useless.

Mrs. A., aged 35, had goiter for four years and had taken the usual medicinal treatment without much benefit. Pressure symptoms had developed, and the growth was rapidly increasing in size. Treatment was given three times a week for two months, when all the annoying symptoms had been relieved. Treatment was continued for two months longer when the gland was reduced to about one-third the size than when treatment was begun. It is now two years since she was exposed to the rays and during that time she has had no annoying symptoms.

THE TREATMENT OF MALIGNANT GROWTHS BY THE ROENTGEN RAYS.*

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In the field of Roentgen ray therapy we are still a band of pioneers endeavoring to discover the possibilities of this new and mysterious agent. Its first decade has been productive of much new and valuable knowledge concerning the therapy of those diseased conditions which have heretofore proven most obstinate to all forms of treatment.

We should be slow to condemn the ray because it has not fulfilled the expectations of the early enthusiasts, or because the results and observations of different operators have varied so greatly. It is only natural that the results should differ when we consider how great are the variations in the agent itself and the methods of application. What it has undoubtedly accomplished should be our standard and the beacon light to guide us in establishing its real value.

To determine the value of the ray as a therapeutic agent we have to consider, first, the factors concerned in the production of the ray and the methods of application in treatment; second, the physiologic and histologic changes due to the ray, and third, the nature and location of the growth to be treated.

First of all one must appreciate the great variability in the different qualities of the ray, that is, its penetration and also its intensity and effective energy. This variability is readily exemplified in the taking of radiographs with different machines. Some static machines will require minutes to do what some coils will do in the same number of seconds. Furthermore, the ray being a form of radiant energy conforms to the law of

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

varying inversely as the square of the distance, or in other words, to have the efficiency at ten inches the same as at five the exposure must be four times as long. Lack of appreciation of these facts will of necessity bring about a great variation in results.

Another serious obstacle in the development of this work has been the fact that there is as yet no unit or standard to measure the different qualities of the ray. Such a standard is necessary in order to record an exposure accurately, and to duplicate a treatment. This, however, can be done approximately. We may assume that the radiant energy from the tube is proportional to the electrical energy flowing in the tube circuit. We will therefore have a measure of the radiant energy if we know the amperage and voltage of the tube circuit. The voltage may be approximately estimated by the length of the equivalent spark gap in this circuit. It is then necessary to note further the duration of the exposure and the distance of the anode from the exposed surface if we wish to measure and to record the amount of radiant energy received by the patient.

The penetrative quality of the ray is dependent chiefly on the resistance in the tube circuit, including of course the tube itself, and is measured by the voltage or the equivalent spark gap.

The volume or intensity of the ray is dependent chiefly on the amperage. With a proper appreciation of these factors all variations in the quality of the ray may be obtained and approximately measured and recorded.

The above principles have been eminently satisfactory to me and practically indispensable in accurate radiographic and therapeutic work.

The property of the ray with which we as therapeutists are concerned may be called the physiologic efficiency. To a certain extent, this is in proportion to the energy given off from the tube. It depends more, however, on the degree than on the total quantity. This is more apparent in the bactericidal influence; one strong intense exposure may destroy bacteria whereas a number of weaker exposures will not do so, although the total amount of energy may be the same. It is on the same principle that one strong blow may accomplish what numerous small blows or a continuous pressure will not accomplish, although in each the total energy expended may be the same. The principle is analogous to the coagulation of albumin by heat. Albumin only coagulates when the heat is applied at a certain degree. The degree of heat is necessary. In the same way, a high degree of radiant energy can accomplish results that could not be accomplished by a smaller degree of radiant energy although longer continued. This seems to me to be true notwithstanding the fact that the physiologic effect of the ray is to a large extent cumulative, that is, the effect of one treatment persists for many days, and subsequent exposures during this time are superadded.

The physiologic efficiency, or the influence of the ray on the tissues, is determined by observation and study of the tissues exposed. Dead organic matter seems not to be affected by the ray. The effect on the living tissues varies from stimulation to complete abolishment of the vital principle and the changes incident thereto. If we knew the physical nature of the ray and if we knew the physico-physiologic nature of that principle that constitutes the difference between living and dead protoplasm, we could probably explain the action of the ray. It is a temptation to draw on one's fancy for a possible explanation. Can it be that the vibration periods of the ray are similar to the vibration periods of the atomic or subatomic activities which constitute the vital principle in a mass of protoplasm, and that the action of the ray is analogous to the influence of music in stirring to activity or putting to silence a tuning fork by sympathetic vibrations?

Certain it is that the action of the ray seems to influence the vital force. It does not immediately affect the tissues as do mechanical, chemical or other physical agents, such as heat. The only immediate results are functional ones, such as the relief of pain. The changes which are brought about in the tissues develop slowly and are such as would occur in consequence of the taking away of their life. Life resides only in cells. It is the cells that we find chiefly affected by the ray. The other elements of the tissues probably are affected indirectly.

It is observed that the ray affects living normal tissues in the following order: The epithelical cells of glands, hair follicles, the skin and those lining the blood vessels and to a very much less extent the cell and fibers of muscle and connective tissues.

We would conclude, therefore, that the elements of the tissues that are most affected are the cells and in the proportion as they exhibit the manifestations of life, and that the tissues themselves are affected in proportion as they have cells and in proportion to the activity of the cells.

The tissues that have the largest proportion of vitally active cells are those of malignant growths, particularly the carcinomas. We, therefore, see the specific or selective action of the ray on these growths.

Sarcomas contain a larger proportion of intercellular material and more blood vessels. The cells have less vital activity, as evidenced by the fewer mitotic figures. They are as a rule more deeply seated. These facts would explain why more carcinomas than sarcomas have been healed by the ray.

Benign tumors are composed chiefly of intercellular substance with a small proportion of cells which are not very active. Such tumors are therefore only slightly or not at all influenced by the ray.

We conclude that in the treatment of tumors by the ray the result depends on the constituent tissues of the tumors and on their accessibility to the proper quality of radiant energy. Since we have shown that the tissues composing the malignant growths are especially susceptible to the ray, success in their treatment depends on their accessibility to the proper ray.

For superficial malignant growths unless they have invaded adjacent bones and cartilages the ray should be used because when rightly applied the result is so uniformly successful. Its application is painless, there is less scar and deformity and a recurrence is in proportion to the thoroughness of the treatment. Carcinomas on the lip or connected with any mucous membrane should, in my opinion, be excised, because for some reason they seem to be especially resistant to the ray.

For malignant growths of the deeper structures, including the breast, radical surgical procedure should be recommended. It is but rational that the surgical operation should be followed by sufficient exposures to the ray to destroy malignant cells that may have been left. It is possible to destroy such cells an inch or two from the surface, and the patient should have every possible chance to have the malignant cells completely eradicated or destroyed. Recurrent growths of the breast often yield readily to x-ray treatment, because the recurrence is so near the surface. The prognosis in these cases depends on whether the neighboring glands or the thoracic cavity are invaded.

In conclusion I would reiterate that we have in the Roentgen ray an agent that has a selective destructive action on the tissues of malignant growths and that the prognosis in their treatment depends on the ability to reach such growths with the proper quality and quantity of this agent.

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[FOR THE DISCUSSION ON THE PAPERS OF DRS. LEONARD, BOGGS AND WILLIAMS, SEE PAGE 364.]

STARCH SUGAR (GLUCOSE AND GRAPE SUGAR) AS A FOOD ADULTERANT.

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The fact that starch can be converted into dextrose and allied bodies by the action of dilute acids was discovered nearly a century ago, but long remained unappreciated as to its commercial value. Its manufacture on a large scale has been pursued for over 25 years and it is now an industry of great importance and extent. Like many other industries of large output, it has passed into the control of a trust, and the quality of the material is not much influenced by competition.

MANUFACTURE OF STARCH SUGAR.

On the large scale, the starch is usually treated with dilute sulphuric acid. The conversion, essentially a process of hydrolysis, differs in degree according to the conditions of operation. In commerce, two types of product are usually recognized: glucose, the syrupy form, and grape sugar, the solid form. Commercial glucose is not of constant composition; it is probable that its exact analysis has not yet been made, but it is known to contain a considerable proportion of one of the dextroses, with more or less dextrins, maltoses, nonfermentable carbohydrates and nitrogenous matters. The solid form (grape sugar) usually contains more dextrose and less of the other ingredients. In the United States corn starch is the main source of these products, but any starch will yield them; potato starch is employed in Europe. Many dilute acids will produce the transformation.

Apart from some limited special applications for which it is alone suitable, commercial glucose and grape sugar are almost entirely employed as adulterants and substitutes for natural carbohydrates. Its employment for such purposes began to be extensive soon after its manufacture on the large scale was undertaken, and the question of its permissibility was, therefore, raised.

REPORT OF COMMITTEE OF 1884.

In 1884, a report was made to the Commissioner of Internal Revenue, by a special committee of the National Academy of Sciences, which had made an investigation at the request of the commissioner. This report expressed the opinion that commercial starch sugar is not harmful. So far this constitutes the principal official utterance in this country, and as, like the land of Sir Joseph Porter, "it is characteristic of this happy country that official utterances are regarded as unanswerable," glucose has been almost unrestricted in its use in food products.

An examination of the original report of the committee shows that the investigations on which was based the decision as to the non-harmful action of these articles in food were entirely insufficient according to modern standards of physiologic inquiry. This does not reflect on the ability of the members of the committee. They proceeded according to the light available at that time. After some dissertation on the history of the manufacture, the report gives analyses of commercial samples. The committee was not unmindful of the imperfections of analytic methods. At the time of the inquiry very little was known about the unfermentable carbohydrates.

The physiologic inquiry was limited to some feeding experiments on a medical man who volunteered for the purpose. Samples of commercial glucose, which had been analyzed as far as possible, were fermented and the residual extracts were taken in considerable quantity for two months by the experimentee, in whom no subjective or objective symptoms of illness were noted. No details are given of any clinical tests applied by the members of the committee or any one else to determine the physiologic condition during the experiments in comparison with the condition in a previous period, nor of any record of inquiries as to metabolism. It would seem from the report that the only information was that the experimentee felt well during the test period, and, as he was a young man and presumably a vigorous man, the test was a superficial one. A capital mistake in the composition of the committee was the lack of a clinical expert. The members of the committee, without exception, were chemists not working in physiology.

The experiments throw no practical light on the effect of starch sugar, as such, used freely and for considerable time. It must be borne in mind that the physiologic action of such an article must be considered from both negative and positive points. Its direct effect as an article of food is one question; its indirect effect as substituting, and thus eliminating from diet, a standard article is another question. Starch sugar might be uninjurious in itself, but as its principal function is to exclude cane sugar from our diet the balance of the food ration is disturbed and physiologic harm may be done. The older notion, often quoted, that starch sugar is substantially identical with the normal digestion products of starch and cane sugar is now not available, for it is known that commercial starch sugar is very different from such products. It is the use of starch sugar as a substitute and adulterant in confections, desserts and syrups, and not its use in the fermentation industries, that is the most important, although, as will be seen below, the latter use must not be overlooked.

INJURIOUS CHARACTER OF STARCH SUGAR.

In the light of modern methods of inquiry, the report of 1884 can not be taken as of value in determining the permissibility of starch sugar in food. I base this statement not merely on the evident insufficiency of the physiologic data presented therein. These are, indeed, wholly insufficient as a basis for the conclusions of the report; but the more serious objection to the decisions of the report is that it takes no account of the possible contaminations of the commercial article, contaminations which are apt to occur in any product involving the use of sulphuric acid, or acids made by its aid, since this acid is especially liable to contain arsenic and lead, two of the most dangerous and insidious of the metallic contaminations of food. The extensive poisoning in England a few years ago by arsenical glucose and brewing sugars is typical of these dangers to public health. The general opinion that such products are harmless led to their unrestricted use, and an unnoted change in the source of the sulphuric acid used for

transformation introduced arsenic into the product from which it was conveyed to the fermented beverages in which those products were used. Many cases of chronic arsenical poisoning were thus developed. It is not at all unlikely that many similar cases there and elsewhere escaped observation or diagnosis, and that lead poisoning has in the same way been caused and overlooked.

The pertinency of this criticism has been well shown in the revelations brought about by the prosecutions recently undertaken by Dr. Warren, Dairy and Food Commissioner of Pennsylvania. Information coming to him that glucose furnished by the American trust, which now practically dominates the American market for starch sugar, was contaminated in many cases with appreciable amounts of sulphuric acid, he caused an investigation to be made, especially by two chemists of the department, C. B. Cochran of Westchester and C. H. LaWall of Philadelphia. Many samples of the candies and of commercial starch sugar were tested, and the objectionable impurity was found in a large proportion. It was found in the lighter colored samples of glucose and grape sugar, and it is not doubted that it is introduced by and through a bleaching process, for darker products, free from the acid, are easily obtainable. In a circular recently issued by the trust, the presence of this acid and its introduction as a part of the regular operation is frankly admitted, but the language suggests to an uninformed person that its introduction was in the regular manufacture, whereas it is a subsequent treatment to improve the appearance of the product.

The objectionable character of the sulphurous acid or its salts as ingredients of food is now established. Several experimenters have pointed out their poisonous nature. The experiments of Harrington are among the more recent and leave no doubt as to the importance of prohibiting absolutely the sale of foods or beverages containing more than very small amounts of such substances. From a theoretical point of view one would expect such unfavorable results, for the sulphites are well known as protoplasmic poisons of high activity.

The fact that the trust has consented to pay all the numerous fines in Pennsylvania, to withdraw the offending product and to market no more of it does not, in my opinion, justify the closing of the general issue. The abandonment of the recently instituted proceedings is, of course, merely a legal question, but I refer to the inadvisability of allowing unrestricted use of starch sugars, based largely (as it seems to be) on the conclusions of the report of 1884. The free use of such materials keeps the community in constant peril; their shortcomings as artificial products are not similar to the shortcomings of a natural product and the unavoidable contact with a crude acid, which, if not a form of sulphuric acid, is probably prepared with its aid, involves both the negative and positive dangers to which I alluded above.

In the light of facts at hand it appears, therefore, reasonable to demand that a careful inquiry shall be made into the uses of starch sugar, and the degree to which such use is made is merely to secure cheapness or convenience in manufacture. If there are purposes for which this product is alone applicable, they are probably very few and limited. It would seem good hygiene and good political economy to forbid its use in all cases in which it merely cheapens the food or beverage, for no substantial good is accomplished by reducing the cost of stable food articles by substitution or adulteration. As in the case of oleomargarin and cottonseed oil, the alleged benefit to the poorer classes is wholly illusory.

THE ANTIGONOCOCCUS SERUM OF ROGERS AND TORREY IN EPIDIDYMITIS.

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In the latter part of November, 1905, H. L., aged 34, a patient of mine at the Good Samaritan Dispensary had been coming for two or three weeks with a primary attack of gonorrhea, when he began to have pain, redness and swelling in the right knee joint. This continued for three days, when I noted that the patient was a very sick man. The knee was much enlarged with an unusual amount of effusion, and I advised him to remain at home in bed and offered to attend him personally at his home, if he would do so. As he was unable to remain at home without working, I sent him to Gouverneur Hospital as being the nearest. A week from that day he walked into the dispensary a perfectly well man, so far as his knee was concerned. In surprise I asked him what they had done to him at the hospital and he replied that they had injected something into his arm for four days and that he had received no other treatment. What this was, I could not even guess, until I read Dr. Rogers'[1] paper on "The Treatment of Gonorrheal Rheumatism by an Antigonococcus Serum" and recognized in his Case 2 the patient I had sent to the hospital. While the serum had had such a startling effect on the man's rheumatism, it had had but little effect on the urethral trouble. Gonococci were present in considerable numbers in the slight urethral discharge, and he remained for some time under my care for an involved prostate and posterior urethritis.

It occurred to me that the serum should be of value in cases of epididymitis, if it were used early enough. Dr. Torrey at the Loomis Laboratory kindly furnished me with the serum as I needed it. Its method of manufacture is given in Dr. Torrey's very interesting paper, page 261, in the same issue of THE JOURNAL with Dr. Rogers' Paper.[1] The serum was furnished in sealed glass tubes containing 2 c.c. Some of the serum furnished me was obtained from rabbits and latterly it was obtained from goats. As Dr. Torrey remarked, if the goat serum was found to be of value, its manufacture would be very much less expensive than that obtained from rabbits.

I am aware that several who have tried the serum in gonorrheal rheumatism have not been impressed, and I have heard that it has proved a failure in epididymitis. But this, I think, is to be expected; until the serum has been tried under many varying conditions, until it has been found under what conditions the most potent and valuable serum can be obtained and also under what conditions we can look for success or for failure, there must be cases which will furnish wearying failure. Nevertheless, a remedy which will accomplish what I saw in the case reported above, is too valuable to be lightly thrown aside.

Before it became time to present the results of my work in this paper, I had hoped to have had twice as much material from which to draw inferences as I have: nevertheless, I feel sufficiently encouraged to keep on with its further study.

While making use of the serum, I did not omit any

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of the methods of treatment which have been found of use. In the early stages a 10 per cent. guaiacol ointment with vaselin is used, covering with a fold of gauze, rubber tissue and a carefully fitted suspensory and renewed as often as may seem to be of use; later ichthyol ointment 10 per cent. or ichthyol and glycerin equal parts of each; also injections of argyrol in the deep urethra, when these could be borne. Some patients do well when local treatment is continued, while others do better if all local treatment is suspended. It is a question of judgment.

I treated 13 cases in all, of which only two disappeared; one patient was sent to the hospital and the other did not return after the first treatment. The other eleven were followed the entire time of their trouble. Eight of the patients were treated practically within twenty-four hours of the beginning of the epididymitis, three had had their trouble three or four days. Those having it longer were not treated with the serum, for I believe that, if it is to be effective, it must be employed as early as possible.

I am aware that the number which I present is too small to admit of positive conclusions on account of the varying degrees of severity in the affection itself. Nevertheless, when one has been treating these cases for a number of years, he is in a position to draw conclusions from a smaller number than is possible without that experience. Then, too, without any previous guide one has to learn how often and how many times it is necessary to use the remedy. Three of the patients received two injections twenty-four or forty-eight hours apart, made an apparent complete recovery within a few days and then suffered a slight relapse which required another injection (which, if used before, would very likely have prevented a relapse).

Three of the patients received two injections, four received three, two received four, and two received five injections. The injections were given, as Dr. Rogers gave his, subcutaneously in the back of the arm, the arm being scrubbed with a solution of bichlorid or bichlorid and alcohol. The syringe used was the "Sub.-Q." with a long reinforced needle of 25 gauge. Needles and syringes were always boiled after use, and the needles could be used several times; when they became dull they were thrown away. Some of the cases presented no local reaction, in others there was considerable local edema and some painful reaction, but nothing worse, no abscess, no disagreeable reaction. Sometimes I was loath to reinject an arm still swollen, so in one case I injected subcutaneously over the abdomen, as we do with the diphtherine antitoxin, but the patient complained of marked pain and soreness for several hours over that site and I did not try it again.

In all the cases but two the patients had no pain after the fourth day except in the three who relapsed. In five patients there was no trace of the disease after complete recovery, no nodule left; in four there was a slight nodule left, and in two there was a large rather soft mass left about the epididymis. Four of the cases were of a severe type from the start. Six of the patients received serum from the rabbit, one from rabbit and goat, and four from the goat.

On a review my impression of these cases is that the serum exerted a distinct effect in all the cases, that the course of the disease was modified by it to a marked degree. The duration of the disease was distinctly shortened, and in several of the cases the quickness of recovery was remarkable.

CASE REPORTS.

The record of cases is as follows:

CASE 1.—J. S., aged 23, seen March 5, 1906, had a gonorrhea of three weeks' standing. Epididymitis began twenty-four hours before but he was unable to get out of bed; the following morning he pulled himself together and got to the office.

Examination.—Discharge had stopped. Left epididymis exquisitively painful, pain out of proportion to the amount of involvement. Epididymis only slightly swollen, but extremely painful on pressure.

Treatment.—After the dressing was applied, there was considerable relief. Injected 2 c.c. of serum (171). Considerable relief all day. On March 6 he went to work. On March 7 the urethral discharge which had stopped since March 4 returned. There was very little sensitiveness when the dressing was applied. Second injection given (171). On March 10, the sixth day, the discharge was slight, urine in both glasses cloudy. The epididymis was to all appearances entirely well, a very slight thickening at this time being left in the tail of the epididymis. Injection omitted. On March 15 patient came with slight return of pain and swelling, a distinct relapse. Third injection of serum given (170). Two days later, on March 17, epididymis had almost returned to normal. On March 31 there was no trace of there having been an inflammation.

CASE 2.—Dispensary case, March 12, 1906, Ph.D., 24 years old, had gonorrhea for two months, this being the second attack. Epididymitis began 24 hours before, pain in left epididymis and cord very severe.

Treatment.—First injection (170). March 13, less pain. March 14, no pain. Nodule left in epididymis; second injection (170). March 17, hard nodule left in testis; no pain; no injection. On March 24, patient having been absent one week, came with a relapse. Pain was slight and swelling slight in epididymis, but there was considerable pain in the cord, especially in inguinal ring. There was also marked frequency and urgency. Third injection of serum (181). After this for about two weeks patient complained of pain in inguinal canal, but no further injections seemed to be necessary. He was working full time. When seen in the early part of April, a small nodule was still left in the epididymis. He was seen last in May; no trace of the disease left.

CASE 3.—L. S., aged 62, had gonorrhea f five weeks. He had had epididymitis 24 hours, on March 12. Right epididymis much enlarged, very painful and tender.

Treatment.—First injection (170). On March 14 less pain, epididymis not so tender; second injection (170). Patient remained quiet at home during the intervals of treatment. March 16, no pain; epididymis hard, but not nearly so tender on pressure; third injection (175). March 19, epididymis slightly reduced in size, improving; fourth injection (175). March 21, no pain, injection omitted. On March 28, i. e., at the end of the second week patient went about in comfort, but the epididymis continued markedly thickened. This was a severe type of case, but I fell sure the serum rendered him more comfortable as to pain, and cut short the trouble.

CASE 4.—L. K., 19 years old, dispensary case, March 12. First attack of gonorrhea, was of 7 weeks' duration. Two weeks before he was threatened with abscess of prostate, which gradually subsided. He had had epididymitis for three days and remained at home during that time. Epididymis of left side was very large and very painful. Cord also involved.

Treatment.—First injection (170). March 14, still much pain, but somewhat less than before, as evidenced when handling the testicle while applying the dressing; second injection (170). March 16, still considerable pain; case evidently of a severe type; besides, injections were not made till third day of attack. Third injection (175). On March 19 patient did not appear; was seen at his home; had high fever and pain in the cord. March 21, he came to dispensary; still great pain in the cord. Pain in epididymis has, however, been absent since March 17. Fourth injection (175). March 24, no pain, patient cheerful and better, no injection. March 26, improving, epididymis greatly reduced in size, patient moves about easily. April 2,

very slight nodule left. May 4, all signs of trouble have entirely disappeared.

CASE 5.—J. P., 22 years old, was seen March 24. He had had epididymitis for three days, gonorrhea two weeks, primary attack. Epididymis large and painful.

Treatment.—First injection (175). March 26, better, no spontaneous pain, swelling reduced one third; second injection (181). March 28, pain very slight, no injection. March 30, still improving, no injection. April 28, slight nodule still left.

CASE 6.—W. W., was seen March 31. He had had internal medication for thirty-one days; primary attack. Patient drove a truck and did heavy lifting. He had had epididymitis for 24 hours, swelling slight, but pain intense.

Treatment.—First injection (187). April 2, no pain when quiet, but great pain when he moved about or rode in the cars (patient came a long distance for treatment, from East New York); second injection (187). April 6, no injection, as both arms were swollen; swelling in epididymis was enormous. April 9, less pain in testicle on handling, swelling reduced one-half. April 16, beginning pain in right epididymis· third injection (187); left side still improving. April 19, right side all right, no trace of trouble on that side, bu left side had again increased in size; pain returned to some degree on moving. April 26, left epididymitis greatly improved, but cord had become involved and very painful at inguinal ring; fourth injection (goat serum). May 3, pain at inguinal ring greatly diminished fifth injection (goat). Swelling in epididymis reduced one-half again. Patient took a hot bath every other day. May 17, he had had no pain for two weeks, the swelling was soft, but large, no hard nodules; patient returned to work. May 23, he felt all right. This case was the worst of the series; nevertheless, patient made a distinct gain after each injection. The necessary long car ride was a great handicap.

CASES 7 and 8.—The next two patients received only one injection each. One was sent, by his own request, to the hospital, as he could not remain at home without working. The other did not return.

CASE 9.—B. R., 27 years old, was seen April 27. He had had gonorrhea three weeks; epididymitis 24 hours, swelling large and painful.

Treatment.—First injection (200). April 28, patient said he felt better; no pain, size the same; second injection (200). April 30, no pain, swelling reduced to one-third of former size; third injection (200). May 2, no pain, nodule only left; fourth injection (200). Patient went to work. May 7, slight return of pain and swelling; fifth injection (200). May 9, no pain; patient continued at work. May 12, slight induration left in tail of epididymis, but no swelling of tissues surrounding it and no pain. May 19, no trace in epididymis.

CASE 10.—J. F., 19 years old, was seen May 10. He had had gonorrhea three weeks, primary attack, and epididymitis 24 hours. Epididymis was very painful, pain running up to inguinal ring. Process in early stage.

Treatment.—First injection (goat). May 11, on coming to the dispensary patient felt no pain, but was obliged to wait an hour before my arrival; he became restless and pain set in again; second injection (goat). May 12, no pain, swelling in epididymis of moderate size; no injection. May 15, not seen for three days, pain again returned slightly. Epididymis was more swollen, but not very tender to pressure; third injection (goat). May 16, one week since beginning of attack; no pain, swelling reduced, no injection. May 17, no pain, patient felt perfectly well. Nodulation was very slight; patient not seen since.

CASE 11.—S. W., 21 years old, seen on May 10, had had gonorrhea two months (multiple attack), epididymitis three days. It began slowly and insidiously, was then very painful, but not much swelling.

Treatment.—First injection (goat). May 14, swelling almost gone. No pain. Testicle painted with ichthyol and glycerin, equal parts, dressing applied; no injection. May 16, patient felt so well yesterday that he went to work. At night had return of severe pain in epididymis and cord, and complains of severe spontaneous pain. Tenderness in handling not marked and there is only slight swelling; second injection (goat). May 17, pain greatly diminished, very little swelling; third injection (goat). No further injection made after this; when last seen, very slight thickening of epididymis noted.

CASE 12.—H. L., 35 years old, was seen May 15. Eight years ago had epididymitis with an attack of gonorrhea. Present attack of gonorrhea began four weeks ago; epididymitis began yesterday. Two injections were made with goat serum on May 15 and 16. May 17, almost no pain, swelling much smaller. May 22, only slight thickening, no pain.

CASE 13.—M. F., 28 years old, was seen May 22. He had had several attacks of gonorrhea. Present attack began five weeks ago. He never had epididymitis before the day previous. He complained of great pain, but process was in early stage, not much involvement. Two injections were given with goat serum on May 22 and 23. May 24, no pain, very slight trace of thickening. May 28, no trace.

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LEGISLATION FOR VITAL STATISTICS IN THE UNITED STATES.

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The condition of registration of vital statistics in the United States has long been a reproach to this country. In a recent discussion in the Royal Statistical Society of England a speaker casually remarked: "In the United States the vital statistics are almost worthless." And he was right, so far as concerns vital statistics covering the country as a whole, and showing, as do those of other civilized countries, the birth rates and death rates from year to year.

The importance of vital statistics, both from a legal standpoint and for the purpose of effective sanitary administration, is not altogether overlooked by us. Certain states have long made effective use of such data. One of the oldest and most efficient systems of registration in this country is that of New Hampshire, and Dr. Irving A. Watson, secretary of the State Board of Health, says in his last report:

> All sanitary calculations are based on vital statistics. Without them health officers would be groping in the dark so far as the results of their work are concerned. Sanitary legislation would be largely of a hit-or-miss character. Scientific methods could not be formulated for the suppression of disease. The importance of a given malady as a cause of death could not be determined—in fact, vital statistics are the measure by which we gauge and weigh, with approximate exactness, the movement of a population; whether increasing or diminishing, the mortality from different causes, the effect of seasons, climate, occupation, locality, and other environments on which the health of individuals and communities depends.

The health authorities of Pennsylvania, after long experience in attempting to do sanitary work without a well-equipped system of registration as a basis, adopted the following resolution which has since resulted in the enactment of one of the best registration laws now on the statute books of any state and the admission of Pennsylvania into the registration area:

> *Resolved*, That the achievement of the registration of all deaths, with their causes, immediately after their occurrence, and the prompt return of certificates of death from local registrars directly to the central bureau of vital statistics which shall constitute a part of the organization of the State Board of Health, thereby giving the sanitary authorities of the state timely information of the exact prevalence and distribution of disease, is the most important of all sanitary measures and should be unremittingly urged until successfully carried out in this state.

While we have no vital statistics for the United States as a whole, we have returns of deaths from certain states having effective laws and from certain cities in non-registration states where there has been effective local registration. It is gratifying to know that the proportion of population thus represented in what is called the "registration area" is increasing, as shown by the following statement:

Year.	Population of continental United States.	Population of registration area.	Per cent.
Census year, 1879-80.....	50,155,783	8,538,366	17.0
Census year, 1889-90.....	62,622,250	19,659,440	31.4
Census year, 1899-1900...	75,994,575	28,807,269	37.9
Calendar year, 1900.....	.....	*30,765,618	*40.5
Calendar year 1906.....	.....	*36,846,981	*48.5

* Population and percentage according to census of 1900.

We have thus reached a point where nearly one-half of the entire population of the United States is represented by mortality statistics, and if we pay suitable attention during the next few years to the enactment of wise legislation in the various states not yet included in the registration area this proportion should be largely increased and the time be in sight when the entire United States shall possess adequate registration of deaths.

In the appended tabular exhibit may be seen just what states constituted the registration area in 1900, and how many have been added since that date. The column showing those not yet accepted as registration states is of special interest, since in many of them inadequate or ineffective laws for this purpose now exist, and in a large number of them the legislatures are now in session, by which proper laws or amendments to existing laws can be enacted.

HOW CAN THE MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION AID?

Briefly, the members of the American Medical Association can be of great service in helping to advance the day of reliable vital statistics in this country in two general ways: (1) By encouraging and helping the state authorities, chiefly members of the state boards of health, who are now advocating the adoption of effective legislation; (2) by discouraging the adoption of measures that experience has shown to be wholly inadequate for the purpose for which they are proposed. Some physicians and members of this Association are also members of state legislatures, and as such may be able to render very effective service in helping to secure good and to ward off bad legislation for vital statistics.

As to the interest of the Association as an organization, I am glad to say that the accurate registration of vital statistics was one of the very first objects which it desired to promote. I find in Vol. I of the Transactions of the Association, for 1848, a report "on behalf of the Standing Committee on Registration of Births, Marriages and Deaths," in which reference is made to an address which was adopted during the preceding year and transmitted, in accordance with the instructions of the Association, to the "authorities of all the United States." Many reports were made by this committee and much of value was accomplished before the Civil War interrupted their labors. I can do no better than to quote and emphasize the concluding paragraphs of the report submitted under date of April 25, 1858, by Dr. Edward Jarvis, "one of the committee on registration":

"As now this system [of registration of vital statistics] is well established and in operation, in Kentucky, South Carolina, Virginia, New Jersey, Connecticut, Rhode Island, Massachusetts and Vermont, eight states, and as Maine and Michigan have taken the preliminary steps for this purpose, and men of science, and even politicians, are using their influence in other states for this object, there is much reason to believe that their example will be followed, and that state after state will, in the progress of time, follow in the same path, until finally, and, we trust, at no distant period, the system will be adopted, and this record of life and death be made complete, throughout our nation.

"It will be necessary for this purpose that the Association bodily, and all of its members individually, publicly and privately, at home and everywhere, use their influence unceasingly until the whole is accomplished."

It is interesting to note that the first three states named by Dr. Jarvis are southern states, although not a single southern state belongs to the registration area to-day. The health authorities of Virginia, however, recently adopted a resolution similar to that adopted by Pennsylvania, and bills for the registration of vital statistics will be introduced during the present legislative sessions in North Carolina and perhaps in other southern states. It is of great importance that this section of the Union should be adequately represented. Organic laws or amendatory acts are contemplated for Missouri, Kansas, Minnesota, Wisconsin, North Dakota, Montana, and Washington, besides a reference to the subject in the constitution of the new state of Oklahoma under which effective legislation can later be enacted.

WHAT ARE THE NECESSARY PROVISIONS OF A REGISTRATION LAW FOR DEATHS?

Experience has shown that certain methods will give satisfactory results for the registration of deaths in this country, and that certain methods will not. Is it wiser to adopt methods that have been tested and uniformly found to give good results, or to adopt certain other methods, that have likewise been tested again and again, and uniformly proved to be worthless? Theoretically this proposition ought not to require much argument, but in practice it does; the same old ineffective plans are still brought forward to-day, and the statute books of certain states are likely to be cumbered with so-called vital statistics laws that can not possibly prove other than futile and absurd.

Following are the necessary elements of a satisfactory registration law for deaths, as formulated by a committee of practical registration officials representing the American Public Health Association and coöperating with the Bureau of the Census, and which, since their publication in 1901, have afforded a safe and efficient guide for legislation and have greatly aided in the extension of the registration area:

1. Deaths must be registered immediately after their occurrence.
2. Certificates of death (standard form) should be required.
3. *Burial or removal permits are essential to the enforcement of the law.*
4. *Efficient local registrars (properly compensated) are necessary.*
5. The responsibility for reporting deaths to the local registrar should be fixed.
6. The central registration office should have full control of the local machinery, and its rules should have the effect of law.
7. The transmission and preservation of records should be provided for.
8. Penalties should be provided (and enforced).

In the above list, the two items neglect of which is most frequently responsible for failure are indicated by italics. The others are equally necessary, but when, in the examination of a law, it appears that there is no requirement for a burial or removal permit before any disposition is made of the body, or that no local registrars are provided, and properly compensated, by whom such permits can be issued, then it is seldom necessary to inquire further as to why deaths are not fully recorded. The burial permit is the absolutely necessary check on the registration of deaths and the only one by which efficient and complete operation of such a law can be secured. If registration is deferred, and undertakers are allowed to inter or to remove bodies without permits, with the understanding that the deaths shall be registered or enumerated at some subsequent time, the result will be that many deaths will never be registered. The immediate local registration of deaths, with the safeguard of a burial or removal permit, necessarily implies that there shall be a local registrar to receive the certificate of death and to issue the permit. This official should have a limited district, and should exercise supervision over it, under the general direction of the central registration office of the state. Only in this way can it be certain that no deaths escape registration through violation of the law, and the central office can thus be able to insure uniform and complete registration for the entire state area. Returns of the original certificates of deaths should be made monthly by the local registrar to the state registrar, affording the most authentic and satisfactory legal records and statistical data for sanitary purposes.

In lieu of this system it has been enacted many times, and always in vain, that deaths should be reported directly to the county health officer, county clerk or other county official. A county officer can not be expected to act as a local registrar of deaths, since it is unreasonable to expect that undertakers should take certificates of deaths to him from distant parts of a county and obtain permits before interment or removal. Physicians will not report deaths completely to a county officer, no matter what penalty is imposed. It is very undesirable that local registrars should report to any county officer, since it only results in delay in the transmission of the returns to the central registration office of the state and serves no good purpose whatever. A registration law can not be satisfactorily enforced through county officers, but only directly by the central office through the local registrars, each of the latter being thoroughly acquainted with and responsible for his limited district. County records may be maintained for legal purposes, if already existing, by means of transcripts or otherwise so that the system will not interfere, as at present, with successful registration.

I have entered somewhat into detail in regard to this matter, because the pernicious county system of attempting to collect vital statistics—it has never yet successfully collected them in a single one of the many states in which it has been tried—is one of the stumbling blocks that are continually thwarting efforts to secure adequate legislation. Its inherent unfitness for this purpose should be understood by all persons interested in better laws. This antiquated and discredited plan was a part of the old Pennsylvania law of 1851. It resulted in utter failure, and it will be a failure if adopted by any state in its legislation of 1907, as it has been time and time again in various states during the intervening years. There is no necessity for wasting further effort on measures that have invariably proved futile and which only hinder the adoption of proper laws. Hence the great advantage of having all such proposed legislation carefully studied by members of this Association who

STATUS OF EFFECTIVE REGISTRATION OF DEATHS, 1906.

Registration States, 1900.		Added as Registration States, 1906.		Not yet accepted as Registration States.	
State.	Population, 1900.	State.	Population. 1900.	State.	Population, 1900.
				Alabama. ..	1,828,697
				Arizona	122,931
				Arkansas ..	1,311,564
		California. .	1,485,053		
		Colorado. ..	539,700		
Connecticut	908,420				
				Delaware ..	184,735
Dis. of Col..	278,718				
				Florida	528,542
				Georgia. ...	2,216,331
				Idaho	161,772
				Illinois	4,821,550
				Ind. Ter. ..	392,060
Indiana. ...	2,516,462				
				Iowa	2,231,853
				Kansas	1,470,495
				Kentucky ..	2,147,174
				Louisiana ..	1,381,625
Maine	694,466				
		Maryland ..	1,188,044		
Mass.	2,805,346				
Michigan.. .	2,420,982				
				Minnesota. .	1,751,394
				Mississippi.	1,551,270
				Missouri ...	3,106,665
				Montana ..	243,329
				Nebraska ..	1,066,300
				Nevada	42,335
New Hamp.	411,588				
New Jersey.	1,883,669				
				New Mexico.	195,310
New York...	7,268,894				
				N. Carolina.	1,893,810
				N. Dakota .	319,146
				Ohio	4,157,545
				Oklahoma .	398,331
				Oregon	413,536
		Penna.	6,302,115		
Rhode Is....	428,556				
		S. Dakota...	401,570	S. Carolina.	1,340,316
				Tennessee .	2,020,616
				Texas	3,048,710
				Utah	276,749
Vermont ...	343,641				
				Virginia. ..	1,854,184
				Washington	518,103
				W. Virginia.	958,800
				Wisconsin.	2,069,042
				Wyoming. .	92,531
Total. ...	9,916,482	Total. ...	19,960,742	Total. ...	46,117,351

Population, registration states, 1900	19,960,742
Per cent. of total population	26.3
Population, registration cities in states added, 1906	3,835,119
Per cent. of total population	5.0
Population of registration cities in nonregistration states.	6,969,757
Per cent. of total population	9.2
Population in registration area 1900	30,765,618
Per cent. of total population	40.5
Net population added to registration area in 1906	6,081,363
Per cent. of total population	8.0
Population in registration area in 1906	36,846,981
Per cent. of total population	48.5

NOTE.—Nearly all of the states not yet accepted as registration states have now, or have at some time possessed, laws intended to secure the complete registration of deaths. These laws have usually been defective in principle, though in some instances faulty administration may have been responsible for failure to secure results. Only three states—Indiana, Maine and Michigan—were added to the registration area during the decade 1890 to 1900, while one state—Delaware, which was admitted as a registration state in 1890—was dropped from the list in 1900. Two states—Nebraska and Utah—adopted legislation in 1905 which requires immediate registration of deaths with compulsory burial permits, and it is hoped that the results obtained will justify their admission at an early date. In addition to the population of the registration states given above, it should be remembered that certain cities in states not yet accepted as registration states having an aggregate population of 6,969,757 in 1900 are also embraced in the registration area, which makes the total population of that area on the basis of the census of 1900 amount to 36,846,981.

are conversant with the essential requirements of registration laws.[1]

I have said nothing in regard to the registration of births, because I believe the registration of births may, as a rule, best be promoted by first passing and enforcing an up-to-date law for the registration of deaths. This will enable all the necessary registration machinery to be organized, and the registration of births can be added after the registration of deaths has proved to be a practical success. The registration of births is most difficult—so much so that no state in this country, and no city, not even excepting cities like Boston and New York where laws have been in force for many years, has obtained complete returns of births. It is likely seriously to hamper the efforts to secure complete returns of deaths, and, as the mortality statistics are of greater sanitary importance, it would seem expedient, as a rule, to direct effort exclusively to the registration of deaths. Exception may sometimes be made with good results, as in Pennsylvania, where a completely organized and well-appointed system for births, deaths, and morbidity statistics as well, was installed, but if there is any doubt as to the ability to frame and to enforce a thoroughly effective law for the registration of deaths then legislation should be limited to what we know can be obtained under proper provisions.

The Bureau of the Census is coöperating with the various states in accordance with a joint resolution of Congress approved Feb. 11, 1903, which "requests the favorable consideration and action of the state authorities, to the end that the United States may attain a complete and uniform system of registration," and has sent many copies of its special publications on this subject, with the approval of the state public health authorities, to the officers of the state and county medical societies which form a part of the American Medical Association. Their attention has been called to the following resolution, adopted by the Association at New Orleans in 1903, and it is hoped that the results shown by the vital statistics legislation of 1907 will indicate the beneficial effect of the interest exhibited by the members of the Association:

Resolved, That the American Medical Association strongly urges on the state medical societies that special committees be appointed to advocate and secure the passage of satisfactory registration laws in states that do not at present possess them, that county societies support and aid in the execution of such laws as far as possible, and that physicians individually, throughout the United States, endeavor to promote the accuracy and value of the mortality statistics by giving clear and definite statements of causes of death on certificates of death.

1. The following publications of the Bureau of the Census relating to this subject are available for distribution: No. 71. Registration of Deaths, including a paper on "The Essential Requirements of a Law for the Registration of Deaths and the Collection of Mortality Statistics. No. 101. Practical Registration Methods. No. 104. Registration of Births and Deaths—Drafts of Laws and Forms of Certificates. No. 106. Extension of the Registration Area for Births and Deaths—A Practical Example of Co-operative Census Methods as Applied to the State of Pennsylvania. A general account of the movement will also be found in the introduction to the special report on "Mortality Statistics, 1900 to 1904."

The Importance of Dietetics.—The various forms of food, the methods and requirements of normal digestion, the influence of age and the adaptability of nutrition in the various diseases to which the human body is liable are subjects to which we can not urge attention too forcibly. It is not wise to urge too rigid a diet in any particular disease. We no longer absolutely discard meat in the nephritic nor sugar in the diabetic patient.—*Medical Times.*

Clinical Notes

THE QUANTITATIVE DETERMINATION OF GLUCOSE IN THE URINE BY A NEW MODIFICATION OF FEHLING'S SOLUTION.

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In the volumetric determination of glucose in urine based on the property of sugar to reduce cupric oxid the end reaction is markedly obscured by the precipitation of insoluble red cuprous oxid. To find a solvent for it has been the object of most of the modifications of Fehling's method thus far proposed.

The employment of an ammoniacal solution of cupric oxid to avoid this disturbing factor was first suggested by Pavy, whose method was subsequently modified by a number of investigators, including one of us (J. Rudisch). Such ammoniacal solutions, however, have not entirely accomplished their purpose. Not alone is the odor of ammonia obnoxious, but unless the determination proceeds rapidly the ammonia is driven off in sufficient quantity during the boiling to permit the deposit of the red oxid of copper before the end reaction is complete.

These disadvantages are overcome in the method devised by Gerrard and Allan. Ten c.cm. of a mixture of equal parts of Fehlings' copper sulphate and alkaline solutions are heated to boiling, and exactly or nearly decolorized by titration with a 5 per cent. solution of potassium cyanid. After the addition of another 10 c.cm. of Fehling mixture to the decolorized solution it is again heated to boiling, and the sugar-containing urine then titrated into it from a burette until the blue color of the added copper is again destroyed. The double salt of potassium and copper cyanid formed during the first titration suffices to keep the red cuprous oxid in solution. This method, involving, as it does, two titrations and extreme care in avoiding an excess of potassium cyanid, presents considerable difficulty to the clinical worker. The use of potassium cyanid, a highly poisonous substance, and the relative instability of the solution are further objections to its general use.

In the following method which we have devised the disadvantages of the Allan-Gerrard test are obviated. To four parts by volume of a 50 per cent. solution of potassium sulphocyanate, chemically pure, is added one part by volume of a mixture of equal parts of Fehling's copper sulphate and alkaline solutions. Twenty-five c.cm. of this solution are placed in a porcelain dish, and the urine to be tested added drop by drop from a burette until the blue color of the copper entirely disappears. Throughout the titration the solution should be slowly boiled and constantly stirred with a glass rod. The end reaction is extremely sharp, the fluid becoming colorless or assuming a faint yellow tinge. The advantages of this method are (1) only one titration is necessary as potassium sulphocyanate does not decolorize the copper solution; (2) potassium sulphocyanate is not poisonous; (3) as the mixture is stable a considerable quantity may be made to be kept as "stock." Such a "stock" solution was found to be unaffected after four months' exposure to heat and sunlight.

With aqueous solutions of glucose ranging from 0.25 to 6 per cent. the results obtained with the authors' method and with the polariscope are identical. With diabetic urines, however, variations of from 0.03 to 0.25 per cent. are occasionally found—differences that are too small to be of clinical significance. These variations are explicable on two grounds. First, substances other than glucose (creatinin, uric acid, glycuronic acid) reduce copper and give too high a reading with Fehling's solution; secondly, levorotating substances (albumin, levulose, β-oxybutyric acid) may coexist with the glucose in the urine, giving too low a percentage with the polariscope. To estimate properly the quantity of dextrose in any given specimen, therefore, it is necessary to make determinations both with the copper solution and with the polariscope. Should the former indicate a higher percentage than the latter, levulose should be suspected and tested for with the Seliwanoff resorcin-hydrochloric acid method. In the absence of levulose the most probable disturbing factor is β-oxybutyric acid, as albumin and other levorotators are precipitated when the urine is cleared with lead acetate for the polariscope.

Although with undiluted urines containing large amounts of dextrose satisfactory results have been obtained with the authors' method, the extreme care necessary in titrating under these conditions makes it advisable to dilute such urine from five to ten times. It is preferable to examine specimens when fresh, but should it become necessary to employ preservatives, toluol, salicylic acid or carbolic acid may be added in small quantities without markedly interfering with the reaction. Chloroform, on the other hand, must be avoided as even in minute traces its presence vitiates the test.

A SIMPLE METHOD OF FINDING THE OVA OF UNCINARIA.

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The following is a simple method of finding the ova of *Uncinaria americana:*

Mix thoroughly one-third of a teaspoonful of hard feces in about a pint of water. After this has stood for about five minutes the ova will have settled to the bottom. Pour off the clear liquid, leaving about one ounce in the bottom of the graduate. Wash the sediment in this manner for three or four times and then strain through cheese cloth or gauze. If the mass does not run through freely, press it with a glass rod. After rinsing, let it settle for a few minutes and then draw up a small quantity from the very bottom of the graduate with a medicine dropper. In a few minutes the ova will have settled at the bottom of the dropper. Put a drop on a slide and cover with a slip. By gentle pressure on the cover slip the drop will become thin enough to be examined. The ova are readily recognized under a 2/3 inch objective.

The following trial showed the superiority of this method over those ordinarily employed. Four slides were made from the same specimen of feces. The first was made by taking a small piece of solid feces and spreading it on the slide with a drop of water. Not a single ovum was found on this slide. The second slide was prepared by washing and settling as described above, but was not stained, and the drop was obtained with a platinum loop instead of the pipette. Only three ova were found. The third was made by using the dropper instead of the loop. Ten ova were found. The fourth slide was made as described above, and 113 ova were counted.

CHEYNE-STOKES RESPIRATION.

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MCCAMMON, IDAHO.

An editorial in THE JOURNAL, Oct. 27, 1906, on Cheyne-Stokes respiration suggested to me the idea of reporting the following case of pneumonia:

Patient.—B. P., aged 4, had always been a healthy boy, but not very robust. He had had an occasional "cold" and measles.

History.—On the night of October 25, he had a severe chill lasting one-half hour. He was restless all night, complained of slight pain in the right side; fever developed. In the morning the temperature was 102 F. A cathartic was given. He did not seem to be very ill until October 28, when I was called. The symptoms at that time were rather marked restlessness, rapid breathing, but no pain. The temperature had varied from 100 to 104 F.

Examination.—Examination showed a fairly well-developed boy. His face was flushed, breathing rapid but not labored, and he seemed rather dull mentally. The eyes showed cloudiness of the sclera, the pupils were even and responded to light; there was no photophobia. There was slight herpes labialis, the tongue was heavily coated with a brown coat, and there was some redness of the pharynx.

Heart: The pulse rate was 120, all sounds were normal, but louder than usual, except some accentuation of the second pulmonic.

Lungs: The middle lobe of the right lung was the only part involved and showed the classic signs of a lobar pneumonia. Respiration was 36.

The abdomen was rather typmanitic.

The urine was heavily colored, specific gravity 1026; there was no albumin, but there was diminution of chlorids; the exact amount of diminution was not determined.

Course of Disease.—Everything went well for a few days, when the lung symptoms grew less prominent, and marked toxemic symptoms appeared. The breathing became quieter and the boy passed a pseudo-crisis on October 30, or five days after the initial chill. The temperature dropped to 97.6 F., the pulse to 60, and respiration to 16.

October 31: Marked meteorism developed, the breathing increased to 24, and was irregular, the temperature rose to 102 F., and delirium developed. The pulse varied between 90 and 130 and was very weak. Calomel and salines were used, as well as increased stimulation. The meteorism was very troublesome and frequent high colonic flushings were necessary to control it at all.

The next few days were stormy ones. Meningeal symptoms were marked, but the character changed from time to time.

November 1: There were marked stiffness of the muscles of the neck, and at times a transient opisthotonos, photophobia, dilated pupils, and almost constant crying. I feared a meningitis, but early on November 2 there was a change in the symptoms. The crying ceased, the photophobia lessened, but the stiffness of the neck remained. At 2 a. m. there set in a new symptom, which I thought was of fatal prognosis. The breathing which had been regular, and rapid only when interfered with by the marked meteorism, developed the Cheyne-Stokes type. From one complete pause to another there were usually seven breaths taken. A few times there were as few as five, and at others nine in the cycle. The heart seemed very weak. This condition lasted for about 16 hours, when there occurred a gradual change.

From this time on there was a slow but gradual improvement. It was a week, however, before the boy was considered safe. He is now in good condition.

I would direct attention to several factors in this case. As in a number of other pneumonia cases I have seen this autumn, the toxemic symptoms were of more prominence and importance than those due to the lung involvement.

Even from the first there was not that classic symptom—a steady temperature. All through the course of sickness the temperature varied. From 102 to 104 F.

was the average, 97.6 and 107 F. representing the extremes.

A pseudo-crisis occurred and there was none of the usual causes to account for the return of fever. There was no new lung involvement nor abscess formation.

Although there was some stupor at first, the meningeal symptoms were slight until after the pseudo-crisis. Then symptoms developed very suggestive of a meningitis, except that they were of a changeable nature. The fact that recovery ensued shows that Cheyne-Stokes respiration is not always significant of a fatal termination.

Treatment in these cases is clear. The main attention should be paid to careful feeding and free elimination. I have found that by using rather large doses of sodium sulphocarbolate and small, frequent doses of aromatic fluid extract of cascara the intestinal condition can be markedly improved. In only the more asthenic cases has there been an urgent demand for calomel and colonic irrigation.

I have also noticed marked improvement following the use of a diuretic.

Potassium citrate, at times theobromin-sodium salicylate, and normal salt solution I consider the best. The latter is best given in enemas.

SPONTANEOUS ARTERIOSCLEROSIS OF THE AORTA (ATHEROMA) IN A RABBIT.*

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So much has been written lately about the artificial production of aortic lesions in rabbits by intravenous injections of adrenalin, nicotin and other substances, and their relation to the lesions in human arterial disease, that it would seem of interest to record a case of spontaneous atheroma accidentally observed in a rabbit.

Figure 1.—Photomicrograph of section of the diseased aorta showing histologic character of lesion (Hematoxylin-eosin).

The rabbit in question was a large, healthy, well-developed female, raised in the country, which had just been received by the laboratory and had not been at the college over eight days. It died of acute anemia in the course of an unsuccessful surgical operation.

Examination of the aorta showed a normal caliber and normal elasticity of the wall. In the arch near its beginning there were several light yellow, fairly well circumscribed, slightly raised, oblong spots from 2 to 3 mm. in greatest diameter, which attracted attention on account of their great similarity to the initial stages of atheroma in man and their dissimilarity to the lesions produced by adrenalin injections.

Figure 2.—Photomicrograph of a section of the diseased aorta stained with Wiegert's stain for elastic fibers, showing separation of elastic membranes.

Sections confirmed this impression. As shown in the photomicrograph, the lesion is situated very largely on the inside of the blood vessel in the region of the intima. The upper layers of the muscle are also involved and the elastic membranes separated more or less from one another, as is shown in the other photomicrograph. This early involvement of the muscle is not astonishing when we remember that in rabbits the intima practically consists of the endothelial layer only. Histologically the lesion is an exact counterpart of the early lesions in human atheroma which I had much opportunity to study in my recent work on human arteriosclerosis.[1] We have the same accumulation of large cells (probably proliferated connective tissue cells) in the tissues with marked fatty degeneration of their protoplasm. In the rabbit also the trouble is not confined to the intima and the upper layers of the muscle, but the adventitia also seems to be involved. The sections show a moderate, but quite distinct fibrous thickening of the latter underneath the plaques, and in serial sections I even discovered an area of cellular infiltration around one of the vasa vasorum in the thickened adventitia.

So far as this observation goes the spontaneous atheroma in rabbits would appear to be much more like that of man than the experimental lesions produced with adrenalin.

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* From the Pathological Laboratory of Cooper Medical College, San Francisco, Cal.

1. Arteriosclerosis of the Aorta, Am. Jour. of Med. Sci., June, 1906.

A SHUTTLE STITCH FOR CLOSING ABDOMINAL AND OTHER WOUNDS.

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One of the very important points to be observed in closing a wound after a celiotomy is to evert the peritoneal edges and thus avoid adhesions of the viscera to the wound. By any of the old methods of suturing this was a very difficult thing to do and often so tedious that no attempt was made to evert the edges. I have practiced this new stitch now in eight cases and find it an ideal one. I use No. 3 chromicized catgut, and thus have a suture material that, while extra heavy for the peritoneum, is just right for the fasciæ, and, as only a small amount of it is used, the extra size is of small consequence. Any right-angled curved needle with a handle will do, but I am having made one with a glover's needle point and a round eye, so that the same needle will do for closing each layer separately and finally the skin, using horse hair or No. 1 pyoktanin catgut for the latter. One end of the catgut is threaded on a straight needle for the assistant and the other end is threaded on the needle of the operator. The assistant first passes his needle through the peritoneal angle of the wound and ties a reef knot, leaving about two-thirds of the suture material on the operator's side. The operator now passes his needle through the transversalis fascia and peritoneum, and the assistant catches up the loop, taking care always to catch only the thread next to the first knot. This is repeated until the other end of the incision is reached, and the assistant then ties another reef knot. Next the needles are passed through the fascial edges at the adjacent angle to the wound, and the same method used in approximating them, simply turning "about face" and closing the fasciæ, ending at the same end of the wound at which the suture began.

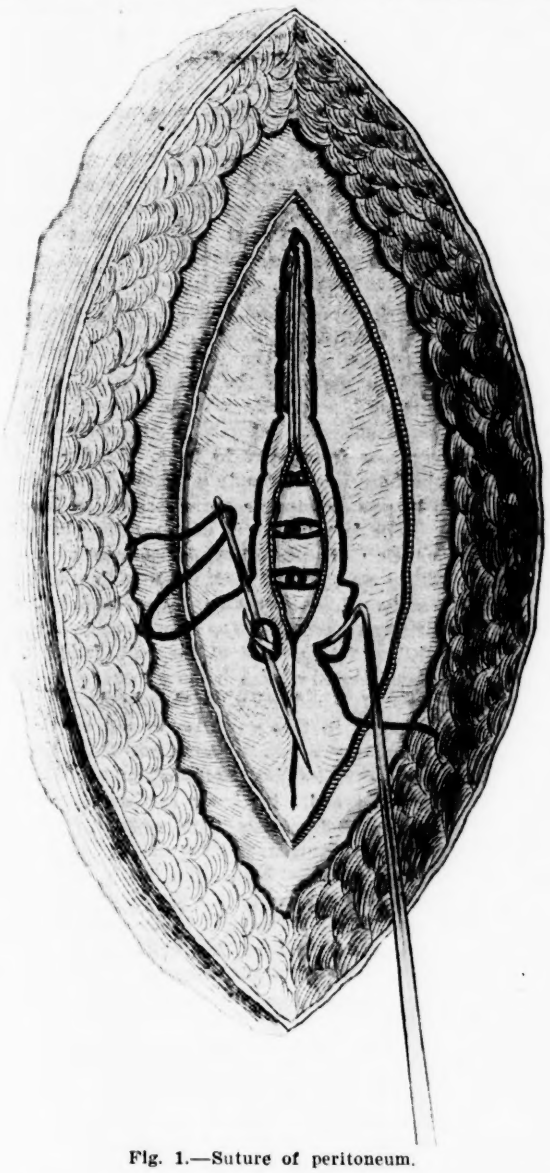

Fig. 1.—Suture of peritoneum.

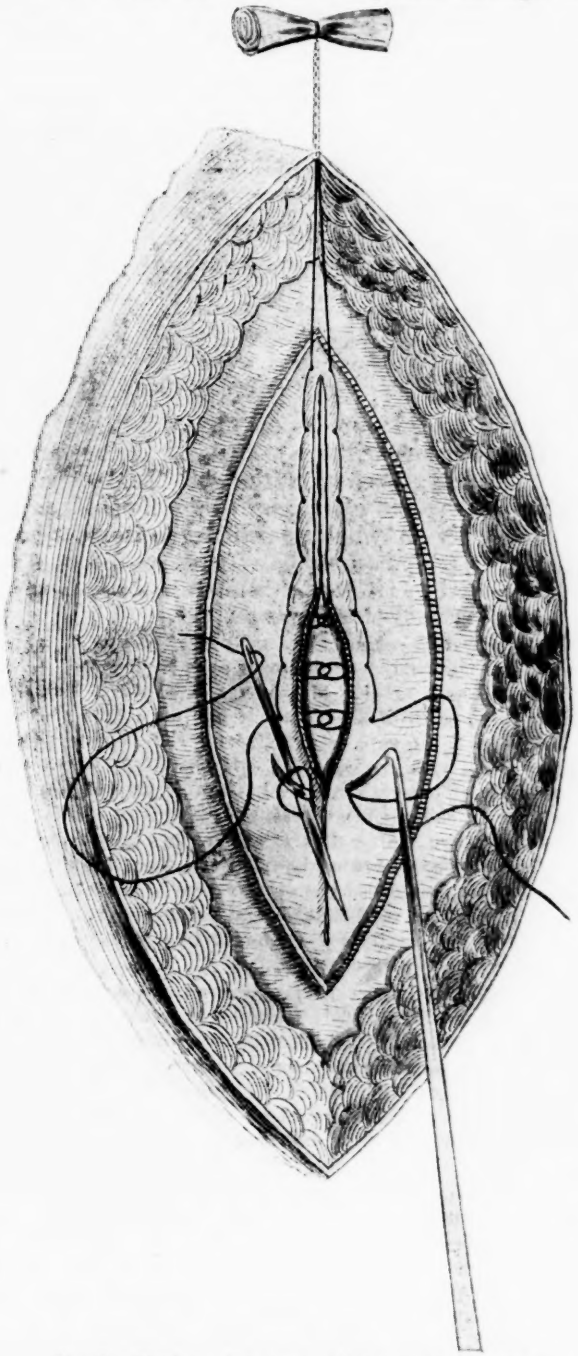

Fig. 2.—Placing of sutures which may be removed.

In case one desires to use silkworm gut or wire for suturing material and later to remove them, a piece of gauze is fastened to the suture ends and the sutures passed through the skin down to the angle of the peri-

toneal wound, the needles are then rethreaded and the shuttle stitch begun as when the catgut was used.

The advantages of this stitch are:

First.—The peritoneal edges are accurately everted.

Second.—Only about one-half of the quantity of buried suture material is required.

Third.—The fascial edges are everted and thus a broad surface for their union is coapted.

Fourth.—One-half of the time is saved in suturing.

Fifth.—The figure-of-eight suture, if desired, can be placed easily just before closing the skin wound.

CASE OF CHRONIC ULCERATIVE CHOLECYSTITIS WITHOUT GALLSTONES AND WITH NO SYMPTOMS REFERABLE TO THIS CONDITION.

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AND
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The following case is reported as showing the possibilities of an evident chronic ulcerative cholecystitis, without gallstones, without stenosis of the cystic duct, which eventually perforated the gall bladder, with no definite history, and giving, up to the time of perforation, absolutely no symptoms pointing to its existence.

Patient.—Mr. C., aged 38, married, hotelkeeper, had lived the greater part of his life on the coast in a city in the extreme south. Family history was negative.

Personal History.—He had measles when about 10 years of age and he had no remembrance of ever having had malaria. He had had nothing else of moment until July, 1906—four months previous to death—when he had an attack spoken of by himself and his wife as a "bilious spell," coming on after a heavy meal, with griping pains over the epigastrium, vomiting of a bitter greenish material, some fever and headache; there were no chills nor jaundice, and the entire attack lasted but a day or two. After this attack perfect health prevailed, with the exception of considerable annoyance from pruritus ani and occasional discharge or moisture about the rectum, with no pain. This condition had existed, however, with gradually increasing severity for a year or two previously, to the best of the patient's recollection.

Operation.—On October 11, the man was operated on by Dr. Tuttle, for a small blind fistula and hemorrhoids, by the clamp and cautery method. Convalescence was immediate, prompt and complete. No symptoms nor signs were present indicating the slightest trouble anywhere. The itching ceased entirely and did not recur. There was no fever, pulse was normal, appetite good, tongue clear, and skin good color.

Postoperative History.—Ten days after the operation, when leaving the hospital, the patient complained of pain in the right side in the region of the hepatic flexure of the colon or lower border of the short ribs. He was temporarily relieved by aromatic spirits of ammonia, but the pain returned later and the physician at the hotel at which he was stopping administered morphin hypodermically.

At 4 o'clock the next morning the patient was awakened by severe pain in the region of the base of the right lung, characterized as sharp, cutting and intensified by breathing. Dr. Tuttle saw him an hour later and found a diaphragmatic pleurisy, temperature 100.6, pulse 96, respirations 36. There was no chill and no tenderness or rigidity anywhere in abdomen.

Dr. Beal saw the man at 11 o'clock the same morning, and found him complaining of pain referred to base of right lung, exaggerated by deep breathing. Temperature was 99.4, pulse 94, respirations 36. There were friction râles corresponding to the upper border of the liver, there were no moist râles or consolidation in lung; there was no exudate in the pleura. The skin was slightly moist, warm and of good color. There was no pain or tenderness over the abdomen; urine had passed freely; bowels had not moved since the previous day. After strapping the side with plain adhesive plaster and ordering a laxative and enema, the patient was left feeling much more comfortable.

Dr. Beal was hastily summoned at 5 o'clock in the afternoon because of sudden and severe pain in the abdomen. He found the patient in marked collapse, pulse almost imperceptible at wrist and ranging from 130 to 140; temperature 98.6, respirations 30, jerky and audible; skin pale and covered with cold perspiration; pupils slightly dilated, expression anxious. The abdomen was distended, rigid and exquisitely tender to palpation, especially over the right hypochondrium. The pain became more intense over the entire abdomen, but was mostly in the right axillary line below the short ribs. It was not marked, nor was there especial tenderness over the gall bladder or the appendix. There was no tension of the right rectus muscle.

A consultation with Drs. Tuttle and John A. Wyeth decided a probable rupture of some viscus, but the condition of the patient allowed of no attempt at relief by opening the abdomen. All efforts to counteract the shock or to overcome the paralysis of the bowels were unavailing, the patient dying in 48 hours after the rupture, with little or no improvement at any time in the condition of collapse which would have rendered operation advisable.

Postmortem Examination.—The autopsy as made and reported by Dr. Jeffries disclosed the following condition:

Thorax: Heart and pericardium were normal. The right lung had moderate adhesions of recent formation in lateral and posterior surfaces from apex to base. At the diaphragmatic surface the lung was so firmly adherent by old fibrinous adhesions that it was impossible to separate the lung from the diaphragm. The left lung had one small, light adhesion at the posterior aspect of apex. Both lungs otherwise normal.

Abdomen: There was general peritonitis with congestion of all the blood vessels. Adhesions were not general, but all the tissues about the lower surface of the liver were firmly matted together. Just below the free end of the gall bladder a small pocket of pus about the size of a hickory nut was found between the surfaces of a reflection of the duodenum and the gall bladder. Adjacent to this was also a spot on the transverse colon with strong adhesions and marked evidence of chronic inflammation. The gall bladder presented a small perforation at its free end. Its inner surface gave evidence of chronic ulcerative cholecystitis with several spots of incomplete perforation at various points on its inner surface. There were no signs of gallstones. The cystic duct was not stenosed. In the peritoneal cavity there was about one quart of turbid, bile-colored fluid. The fluid in the gall bladder was of the same character as that in the peritoneal cavity. The liver was normal in size and well advanced in fatty changes. The kidneys were congested and were in a state of acute parenchymatous nephritis.

The condition was undoubtedly a chronic ulcerative cholecystitis with acute exacerbation and perforation. The firm adhesion between the gall bladder and the transverse colon was either a former perforation, or more probably an extension of the inflammation through the wall of the gall bladder.

76 West Eighty-fifth Street.

Proper Names in Medical Nomenclature.—This was the title of an inaugural thesis presented at Erlangen, 1906, by H. Orth, which is a valuable addition to reference literature. The *Monatshefte f. prakt. Dermatologie*, No. 11, Dec. 1, culls from the list those names relating to cutaneous affections and syphilis, and gives them with the definitions. Among the less familiar we note "Beckmann's method"—determination of the freezing point of blood and urine in test of kidney functioning; "Marochetti's blisters"—observed under the tongue in case of hydrophobia; "Schoenlein's triad in purpura"—exanthem, rheumatic phenomena and gastrointestinal disturbances; "Shelley's sign in grip"—sago-like eruption on palate and lips; and "Zangel's apostem"—condyloma.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 227.*)

VERONAL.

DIETHYLMALONYLUREA. DIETHYLBARBITURIC ACID.

Veronal, $CO\begin{matrix}\diagup NH—CO\diagdown \\ \diagdown NH—CO\diagup\end{matrix}\!\!>C\!<\!\begin{matrix}\diagdown C_2H_5 \\ \diagup C_2H_5\end{matrix} = C_8H_{12}O_3N_2$, is a ureide derived from diethylmalonic acid, $COOH.C(C_2H_5)_2.COOH$, and urea, $CO(NH_2)_2$.

It is prepared by the interaction of esters of diethylmalonic acid with urea in the presence of metallic alcoholates.

It is a white crystalline powder, melting at 191° C. (375.8° F.), odorless and faintly bitter. It is soluble in about 150 parts of cold water, but in 12 parts of boiling water. It forms alkaline salts which are easily soluble.

Prolonged heating with sodium carbonate solution liberates ammonia. Denninges' reagent produces a white precipitate; Million's reagent produces in solution acidulated with nitric acid a precipitate soluble in an excess of the reagent.

Actions and Uses.—Veronal is quickly absorbed, especially when it is given in solution. In small doses it induces sleep apparently without any other effect. In larger doses the temperature falls and animals show marked trembling and restlessness in their sleep. In small doses it is a relatively safe hypnotic, but fatalities have followed its indiscriminate use.

It is recommended in simple insomnia, as well as in that accompanying hysteria, neurasthenia and mental disturbances.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in hot water, tea or milk, or, if in wafers or capsules, followed by a cupful of some warm liquid.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Merck & Co., New York). U. S. patent No. 782,739. U. S. trademark.

VIBUTERO.

ELIXIR VIBURNI COMPOSITUM, STEARNS.

An elixir, each 30 Cc. (one fluid ounce) of which is said to represent: Blackhaw 2.6 Gm. (40 grains), cramp bark 2 Gm. (30 grains) squaw vine, wild yam, Jamaica dogwood and saw palmetto berries, of each 1.3 Gm. (20 grains), pulsatilla 0.65 Gm. (10 grains) in a menstruum containing 17 per cent. of alcohol.

Dosage.—8 Cc. (2 fluidrams), three times a day, followed by a teacupful of hot water.

Prepared by F. Stearns & Co., Detroit, Mich.

VINUM EXTRACTI MORRHUAE, STEARNS.

STEARNS' WINE OF COD LIVER EXTRACT WITH PEPTONATE OF IRON.

A wine containing in each 30 Cc. (one fluidounce) 0.26 Gm. (4 grains) of alcoholic extract of fresh cod liver (made from fresh livers received in alcohol and containing their full amount of oil) and 0.26 Gm. (4 grains) of peptonate of iron in a menstruum containing 15.25 per cent. of alcohol.

The wine contains about 0.25 per cent. of oily extractives. It has a fairly pleasant taste, not at all suggestive of cod liver oil.

Actions and Uses.—It has been introduced as a substitute for cod liver oil. It is not believed by pharmacologists generally that the oil free extractives represent any considerable part of the therapeutic efficiency of cod liver oil.

Dosage.—15 Cc. (4 fluidrams) before meals and at bedtime.

Manufactured by F. Stearns & Co., Detroit, Mich. U. S. trademark No. 53,596.

XEROFORM.

BISMUTH TRIBROMPHENOLATE. TRIBROMPHENOL-BISMUTH.

Xeroform, $Bi_2O_2.OH.(OC_6H_2Br_3) = C_6H_3O_4Br_3Bi_2$, is a chemical combination of bismuthyl oxide and tribrom-phenol, containing nearly 60 per cent. of Bi_2O_3.

According to the patent it is obtained by dissolving tribromphenol in sodium hydroxide and adding bismuth nitrate to the sodium tribromphenolate solution. The precipitated tribromphenol bismuth is collected, and washed with alcohol.

It is a fine yellow, nearly odorless and tasteless powder, neutral in reaction, and unaffected by light. It is insoluble in water, alcohol, chloroform, liquid petrolatum and vegetable oils, but soluble in 2 per cent. hydrochloric acid in the proportion of 30:100. By alkalies it is decomposed with the formation of bromides; it is not decomposed by heat at temperatures below 120° C. (248° F.), and therefore may be sterilized.

It should yield 59.5 per cent. of bismuth oxide. If 1 Gm. is boiled with sodium hydroxide T. S., filtered, the filtrate rendered acid with sulphuric acid and the white, curdy precipitate washed and dried, it should melt at 95° C. (203° F.) (tribromphenol).

It is incompatible with alkaline media and should not be heated above 120° C. (248° F.).

Actions and Uses.—Xeroform is a non-irritant and non-toxic antiseptic. It is recommended as an odorless and efficient substitute for iodoform; as a specific in *ulcus cruris* and all weeping eczemas; internally, in gastrointestinal catarrh, proctitis, dysentery, bacillary and choleraic diarrhea, cholera infantum, etc.

Dosage.—1 to 3 Gm. (15 to 45 grains) per day to adults; 0.12 to 0.3 Gm. (2 to 5 grains) at a dose to children. Externally, as a dusting powder, in bandages, etc., like iodoform.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 516,358. U. S. trademark.

ADNEPHRIN SUPPOSITORIES.

Each suppository represents a 1 to 1,000 combination of adnephrin with oil of theobroma and weighs about 1 Gm. (15 grains).

Actions, Uses and Dosage.—See Suprarenal Alkaloid and Adnephrin Solution.

Prepared by Frederick Stearns & Co., Detroit, Mich.

ALBARGIN.

GELATOSESILVER.

A compound of silver nitrate with gelatose, containing from 13 to 15 per cent. of silver.

It is prepared by adding silver nitrate to a solution of gelatose in water, evaporating the solution or precipitating the compound by the addition of ether or alcohol. It is a coarse, yellow, shining powder, very easily soluble in water forming neutral solutions. The presence of gelatose, silver and a nitrate can be shown by appropriate tests. It is incompatible with tannin and chlorides.

Actions, Uses and Dosage.—Albargin is used as a substitute for silver nitrate. It is marketed only in the form of tablets containing, each, 0.2 Gm. (3 grains).

Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

(*To be continued.*)

Difficulties of an Internist.—J. H. Latta, Wichita, Kan., in the *Journal of the Kansas Medical Society*, states that the difficulties which meet the internist may be divided into three classes: 1. Those growing out of the relations existing between internal medicine and surgery; 2, those traits, innate or acquired, existing in the internist himself; 3, those outside interfering difficulties other than surgical.

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THE CAUSE OF THE REDUCTION IN THE DEATH RATE FROM PHTHISIS.

It is a fact well known to students of vital statistics that during recent years there has been a marked decline in the death rate in most civilized countries from pulmonary tuberculosis. This has occurred in widely separated parts of the world and has been almost universal, although there are some conspicuous exceptions to this rule, that of Norway being perhaps most noteworthy. The figures for many large cities, such as Paris, Berlin, Hamburg, Copenhagen, London and New York, show a marked and fairly continuous decline, amounting in some cases to a reduction of one-half. The chief departure from this general downward trend, as already stated, is the country of Norway, in which between 1871 and 1900 a very considerable increase in phthisis has been recorded. To a less extent an increase has also taken place in Ireland. Speculation has naturally been active concerning the cause for the remarkable general decline of this formidable disease, and many have been inclined to refer it complacently to an improvement in general sanitary conditions of life and to an extension of material well-being. The problem, however, has been recently subjected by Newsholme[1] to an exhaustive statistical investigation, in which various factors, such as urbanization and overcrowding, the price of wheat, cost of total food, total cost of living, wages, amount of food consumed, pauperism, education of the public, direct prevention, and measures of institutional segregation, are considered as possible influences affecting the phthisis death rate. Among these influences there is, in Newsholme's opinion, only one directly connected with the course of phthisis, so far as the available data permit of judgment; this is the institutional segregation of phthisis.

As the result of a prolonged inquiry, Newsholme concludes that the institutional segregation of phthisis, as measured by the ratio of deaths or cases in institutions to deaths or cases in the total community, shows from moderate to close co-variation in the United Kingdom, London, Norway, Sweden, Copenhagen, Prussia and Berlin, Brussels and New York. In Paris the character of the hospital treatment does not allow comparison to be made. Finally, the opinion is expressed that segregation in general institutions is the only factor that has varied constantly with the phthisis death rate in the countries that have been examined. Institutional segregation must, therefore, be regarded as having exerted a more powerful influence on the prevention of phthisis than any other factor, none of which has varied consistently with the phthisis death rate.

Newsholme's authoritative reputation as a student of vital statistics and his long familiarity with this field render his paper worthy of careful study by those engaged in the campaign against tuberculosis. The thesis that he has advanced would seem to lend itself to experimental verification; such verification need not cover a very long period of time nor involve very great expense. Certain localities may prove especially well adapted to the study of this question.

1. Jour. of Hygiene, 1906, No. 3, page 304.

SLEEPING SICKNESS.

Medical research is not invariably fruitful of immediately encouraging results; it often disturbs blissful ignorance, as we frequently have occasion to observe. It may also bring out facts that may seem to contradict the results that had previously been obtained, or may further complicate a subject that had been apparently clearing up. A case in point is furnished by the latest reported finding in regard to the trypanosomes infesting the African tsetse flies, though as yet it is only suggestive rather than actually conclusive in any respect.

In the recent preliminary report[1] of the British commission to investigate sleeping sickness at Entebbe, Uganda, it was stated that the *Trypanosoma gambiense*, the protozoön responsible for the disease that has been devastating East Africa, had but a limited existence in the tsetse fly, *Glossina palpalis*, whose bite transmits the disorder, but died in its intestine within ninety-six hours. The infection, therefore, was thought to be only by the direct mechanical transmission of the parasite during the period in which it survived in the insect's proboscis; there was no cyclical infection comparable to that of malaria, though the life cycle of the organism had been carefully sought for. In a more recent communication to the Royal Society, however, Dr. E. A. Minchin,[2] of the commission, announces that one of the "wild" trypanosomes (*T. grayi*) occurring in the glossina with the *T. gambiense* becomes encysted in the hind gut of the fly, and this suggests the possibility of another method of infection by contamination of food or drink by the cast-off cysts. It arouses the suspicion, at least, that the earlier disappearance of the sleeping sickness organism may be due to its being cast off in a similar way. What can occur in one species of trypanosome may also occur in other allied species. This discovery, therefore, complicates the problem of the extinction of sleeping sickness and calls for further and, it may be, more difficult researches before any absolutely certain prophylaxis can be assured. Sleeping sickness

1. Nature, Nov. 15, 1906.
2. Nature, Dec. 27, 1906.

has not yet invaded the United States or any of its island dependencies, but it has been transported across Africa by civilized agencies and, with increasing travel and commercial expansion, may threaten other tropical and subtropical regions unless checked. It is, of course, conceivable that conditions which are suitable to the life cycle of the trypanosome of sleeping sickness may exist outside of Africa and that other insects than the glossina can mechanically transmit the infection. The white race is not immune, as is shown by the death of one of the members of the British commission investigating the disease. The prospects of its control at present, however, seem encouraging, and if Koch has really discovered the natural habitat of the *Trypanosoma gambiense* in the crocodile it would appear that a very important advance in the control of the disease has been gained.

NON-INFECTIOUS DUST AND ITS DANGERS.

Everyone now realizes the danger to the lungs from inspiration of the dust in the air. Most people, however, consider that this danger is due entirely to the infectious nature of the dust particles themselves or else to the fact that micro-organisms cling to dust particles and so may be carried deep into the respiratory passages. Ordinarily it is not realized that dust containing no infectious elements may prove at least a predisposing cause to pulmonary disease and that the irritation which it sets up may, indeed, provide the necessary factor that must ever form the connecting link between the microbe and the individual. Most people come in contact with germs of disease, while only susceptible individuals are affected by them, and the question of susceptibility is even more important than the virulence of the microbe. Whatever lowers resistive vitality may prove as harmful for the individual as the mere presence of pathogenic germs on the mucous membranes.

A rather startling proof of the pathogenic quality in an indirect way at least of non-infectious dust is to be found in some recently published statistics of the Metal Polishers' Union of North America.[1] The members of this union are the metal polishers, buffers, platers, brass molders, and brass and silver workers, of the United States and Canada. Their occupation consists in part in applying metal articles to rapidly revolving wheels in order to finish them for the market. The wheels must turn toward the workman because otherwise the articles would be snatched out of his hands, as from 2,000 to 3,000 revolutions a minute are required. All the wheels give off dust particles of various kinds, and all rub fine material from the surfaces of articles to be polished. The workmen live during their working hours, therefore, in an atmosphere thick with dust. All this dust, however, is perfectly free from infectious material, except for chance accidental contamination, and even this must be rare, since many of the dust particles are hot, owing to the velocity of the wheel.

The treasury of this union, in spite of the fact that the men are steady and have no special temptations to excess, was found to be constantly exhausted. The reason is that the death claims eat up all the funds. An investigation of these claims showed that many of the men were dying from pulmonary tuberculosis. There were some deaths from accident, a few suicides, but the rest were all from pulmonary diseases—and pneumonia was very rare as compared with phthisis. The statistics for the last four years show that in 1903, 45 metal polishers died, of whom 43 succumbed to some lung trouble. In 1904 there were but 38 deaths among the metal polishers, of which only three were due to other causes than pulmonary disease. In 1905 there were 70 deaths among the metal polishers, 65 of which were due to some form of lung trouble. In New York City a local union having 170 men working exclusively on the precious metals, had eight death claims in two years, seven being due directly to tuberculosis, while 400 men employed in all the other branches of the same industry have had but three deaths from this cause in the same space of time.

It would seem from these statistics that even the cleanest kinds of dust, without a trace of infectious material in them, may still prove a source of the greatest possible danger and be the indirect cause of tuberculosis. This has been known for some time, but so startling a confirmation of it is sure to emphasize the necessity for taking every precaution for the avoidance of dust. Even what might seem to be the most innocuous of dirt particles may, when inspired, constitute foci of irritation in which tubercle bacilli may readily find a favorable nidus for implantation and growth. Hence the necessity for the cleaning and above all for the sprinkling of streets. Hence also the supreme advisability of the modern methods of house cleaning which do away with the raising of dust. If the crusade against tuberculosis is to be successful, hand in hand there must go with it the crusade against dust and dirt.

1. The Independent, New York, Dec. 27, 1906.

CARROLL'S PROMOTION AND THE NOBEL PRIZE.

There is an old tradition that republics are prone to be ungrateful for benefits conferred because, to a great extent, they are lacking in that sense of personal obligation which characterizes a monarchy. What is everybody's business, in the way of return for work done, becomes nobody's business. It has been hoped, however, that our American republic would disprove this old-time tradition of ingratitude. There would seem to be an excellent chance for it to do so at the present moment and, by recognizing a noble deed, to confer deserved honor without waiting till death has come to diminish the effectiveness of the expressions of appreciation. Only one man is now alive of the little group of United States Army surgeons to whom the world owes the precious

knowledge which has transformed that dread scourge, yellow fever, from one of the most serious and expensive of diseases to one so easily prevented that the hope of its complete eradication in the near future is now a confident prospect in medicine. Dr. Walter Reed and Dr. Jesse Lazear are dead, but Dr. James Carroll, who was among the first of the heroes of science to allow himself to be bitten by a mosquito that had fed on a yellow-fever patient and who actually contracted the disease, is still with us. If ever there was a heroic act performed by a soldier, this was one, and such heroism deserves to be rewarded and encouraged.

As we have before noted, a bill is before Congress to make Dr. Carroll an extra lieutenant-colonel. He now holds the rank of lieutenant, and, as he is over 50, the most that he can expect in the regular routine of promotion, before he is retired for age, is his captaincy. Such promotion as the bill provides for would not disturb the regular order of official rank and would provide a suitable reward for what future generations are sure to consider as one of the most unselfish acts of our time.

But there is still a greater reason why it is to be hoped that Congress will recognize the services of Dr. Carroll by passing the bill referred to; by this recognition the movement to secure for him the Nobel prize would receive a great impetus and would have an important influence on the committee that awards the prize. Certainly the conquest of yellow fever is of sufficient benefit to mankind to meet the conditions of the award. Though, because of his lower military rank, he was subordinate to Dr. Reed, the responsible head of the commission that demonstrated the etiology and successful prophylaxis of yellow fever, Dr. Carroll was longer, if not more closely, associated with the details of the investigation and largely had charge of the experimental work that was so fruitful of results. He was himself the first voluntarily to submit to an experimental inoculation by the bite of an infection-carrying stegomyia. He risked his life in the cause, and the attack of yellow fever following the risk has left him, to a certain extent, disabled.

One Nobel prize has already been awarded to Dr. Ronald Ross, of England, one of the leading workers in the discovery of the mosquito origin of malaria, a research no more fruitful of valuable results than the yellow-fever investigation and demanding no such personal peril and sacrifice. With this precedent and with the proper steps taken by the American medical profession, there would seem to be no good reason why this prize should not be awarded to Dr. Carroll. We know of no more deserving possible recipient. Certainly the sacrifices that Dr. Carroll made are equal to those made by any man to whom a Nobel prize has been awarded, and the benefits to humanity are certainly as great as those that have been the outcome of any undertaking of any man who has been awarded the prize.

BILL TO INCREASE THE EFFICIENCY OF THE ARMY MEDICAL CORPS.

The bill to increase the efficiency of the medical department of the Army, which has twice passed the Senate, and been favorably reported, with slight amendments, unanimously, by the Committee on Military Affairs of the House of Representatives, April 4, 1906, is still, at this late date, awaiting action by the House. This bill, the necessity for the passage of which is acknowledged by all familiar with the facts in the case, which has been approved by the President twice in special messages to Congress, which has the unqualified approval of the Secretary of War and the general staff of the Army, and of the entire medical profession of the United States as voiced in its official journal, is in danger of failure unless special efforts are made to secure action by the House of Representatives. The short session of Congress is rapidly drawing to a close, yet this bill, so necessary to the welfare of the Army, a bill which everybody apparently favors and no one opposes, which costs nothing, may fail because it can not be brought to a vote. It behooves the medical profession of the country to assert itself and to ascertain why a measure which so directly concerns the physicians of the country is not given at least an opportunity for Congress to express its approval or disapproval.

VISUAL ERRORS AND AUTOMOBILE ACCIDENTS.

It has long been the custom to subject locomotive engineers to certain visual tests, especially tests for color perception, in order to safeguard the interests of the public. It is a question whether chauffeurs ought not also to be examined with regard to their visual acuity. Even now, seldom a week passes without some automobile accident being recorded in the daily press, and without doubt many of the minor accidents are never reported at all. The number of automobiles in use is constantly increasing, and as this form of carriage becomes more available for commercial purposes this increase will become more and more rapid. Clements[1] points out that the chauffeur must be an accurate judge of pace and distance, and that this necessitates normal visual acuity. He calls attention to a series of motorists who consulted him regarding their vision after having undergone a number of minor mishaps, most of which, but for lucky chances, might have been much more serious. In all the patients Clements found errors of refraction, generally in the form of hypermetropia. In all instances, too, the danger of accidents of a certain class disappeared under correction of the error of refraction. In most of the instances referred to the accidents occurred about dusk and at turns in the road, the chauffeur miscalculating the distance and running into a ditch or bank. Clements calls attention to the fact that the convex goggles worn by autoists are practically weak hyperopic lenses, and that they may just turn the balance in favor of spasm of accommodation.

1. British Med. Jour., 1906, II, 1636.

THE INTERPRETATION OF MEDICAL LABORATORY FINDINGS.

It is unfortunate that all practitioners of medicine have not had a laboratory training, for the lack of it tends to make them put an erroneous valuation on the findings of the microscopist. Under ideal circumstances every practitioner would be able to make his own laboratory tests, but lack of the necessary training, or want of time, often render this impossible. Every physician who avails himself of laboratory tests should be able, however, to interpret the findings. The point on which many practitioners go astray is the significance of negative reports. While the presence of tubercle bacilli means tuberculosis, and of diphtheria bacilli means diphtheria, many physicians do not fully realize that the absence of these organisms does not exclude these diseases, especially if the failure results after a single examination. A case in point is recorded by Knauer[1] in which a physician assured a patient that he did not have syphilis after the negative examination of a suspicious sore for the *Spirochæta pallida*. Clinically, the sore strongly suggested an initial lesion, and the patient was naturally surprised and grieved when he developed secondary symptoms. Too much stress can not be laid on the fact that laboratory findings must be correlated with clinical findings, and that negative findings in diseases of bacterial origin do *not* exclude the disease suspected.

ETERNAL VIGILANCE, THE PRICE OF SAFETY.

There has never been a time when the public has been so interested in matters relating to hygiene and sanitary science, including in this "patent medicines," frauds in food, etc., as at present. This interest, of course, has been aroused by the articles that have appeared in the lay journals on "patent medicines" and sophisticated foods, and especially by the publicity given in the newspapers to existing conditions as developed in the propaganda for the pure food law. In many states this winter bills similar to the national pure food act have been or will be introduced in the legislatures. In some states attempts will be made to secure legislation looking to the registration of vital statistics, in accordance with the recommendation of the Division of Vital Statistics of the U. S. Bureau of the Census. Besides these, in many states the boards of health are asking for an enlargement of their functions, for laboratories, to investigate foods and medicines. All these efforts for the protection of the public should receive the endorsement and assistance of physicians. Conditions seem very favorable for the passage of state pure food laws including "patent medicines"—so favorable in some states, in fact, that the passage of the bills, we are afraid, is being taken for granted. It must be remembered that the Proprietary Association is not giving up so easily as it appears to be and that more than ever before will pressure be brought to bear on the public press through its advertising departments. As a duty to his community every physician should solicit the aid of his state legislator and senator in getting such laws passed as will protect the public and guarantee them purity in food products.

1. Münch. med. Wochschr., Dec. 18, 1906.

Medical News

ALABAMA.

Smallpox.—On account of the recent cases of smallpox in Eufaula, the city council has ordered the infected houses thoroughly guarded and the residents of that portion of the city vaccinated.

County Society Meetings.—At the annual meeting of the Baldwin County Medical Society, held in Point Clear, January 7, the following officers were elected: President, Dr. Philip M. Hodgson, Stockton; vice-president, Dr. Joseph Hall, Bay Minette; secretary-treasurer, Dr. Henry Borst, Silverhill; censor, Dr. Clarence L. Mershon, Fairhope, and health officer, Dr. Volney McR. Schowalter, Point Clear.——At the annual meeting of the Tuscaloosa County Medical Society, held in Tuscaloosa, January 7, Dr. Joseph Leland was elected president; Dr. William G. Somerville, vice-president; Dr. Arthur A. Kirk, secretary-treasurer; Dr. G. C. Merriam, censor, and Dr. Surry F. Mayfield, county health officer.——The Talladega County Medical Society, at its annual meeting, held in Talladega, elected the following officers: Dr. Wallace R. Bishop, president; Dr. Eugene P. Cason, vice-president; Dr. Bishop B. Warwick, secretary; Dr. Thomas K. Mullins, treasurer, all of Talladega; and Dr. George A. Hill, Sylacauga, censor (re-elected).

ARIZONA.

Society Meeting.—At the annual meeting of the Pima County Medical Society, held in Tucson, January 8, Dr. William V. Whitmore was elected president; Dr. Arthur W. Olcott, vice-president, and Dr. Abram Morrison, secretary-treasurer, all of Tucson.

Hospital Needed for Asylum.—Dr. Ray Ferguson, Phoenix, superintendent of the Territorial Insane Asylum, reports the institution as greatly crowded and that a hospital is urgently needed, as patients who become ill can not well be cared for in the regular wards. He will ask the legislature to make an appropriation of $15,000 to build a hospital for the asylum.

ILLINOIS.

Contagious Diseases.—Evanston, Oak Park, Wilmette and Kenilworth public schools have been closed on account of the prevalence of scarlet fever and diphtheria.——Smallpox is reported in Galesburg, North Chillicothe, Hoopeston, Stronghurst, Wyoming, Casselton, Toulon, East Peoria, Burrowsville and Jacksonville.——At DeKalb 156 cases of scarlet fever are reported and 68 houses are under quarantine.

Personal.—Dr. A. W. Hinman, Dundee, recently underwent an operation at the Sherman Hospital, Elgin.——Dr. Harry S. Allen, New Boston, is being treated in a Chicago hospital.——Dr. John W. Powers, Mount Carroll, has been appointed physician of Carroll County.——Dr. R. O. Lacey, Carbondale, who has been seriously ill, is reported to be convalescent.——Dr. J. M. Cody, Tremont, is convalescent after a serious illness and operation.——Dr. Hasleu, Grand View, is reported to have been injured in the explosion which destroyed a passenger train at Sanford, Ind., January 19.

Chicago.

Emergency Appropriation.—The city council has been asked to appropriate $15,000 for the employment of additional medical inspectors, their work being needed to combat the present epidemic of scarlet fever and diphtheria.

Play by Chicago Physician.—From February 11 to 23 there will be presented at Powers' Theater a play, "The Strength of the Weak," one of the authors of which is Dr. Alice M. Smith, a graduate of the Northwestern University Woman's Medical School.

School Inspection.—The health department publishes figures relating to the result of school inspection, as regards diphtheria and scarlet fever. Inspection was begun by the department in 1896 and continued for three years. During the preceding three years deaths from scarlet fever have averaged 1.54 per 10,000 of the population, but during the period of inspection the rate was reduced to 0.45—a reduction of 70.8 per cent. In the intervening period from 1889 to 1906, with a steadily diminishing school inspection, culminating in its recent total abandonment, the rate has averaged 1.64 per 10,000, an increase of more than 264 per cent. During the three years before inspection was introduced there were 11.55 deaths per 10,000 of population. During the years of inspection the rate fell to 5.75 per 10,000, a decrease of 50.2 per cent. There has been a still further decrease to 3.25 per 10,000 during the intervening period, attributable solely to the antitoxin treatment.

Personal.—Dr. and Mrs. Daniel R. Brower left Chicago for Egypt and Palestine, January 23.——Dr. Daniel R. Brower has been elected president of the Senn Club, vice Fernand Henrotin, deceased.——Dr. George W. Hall sailed for England January 1.——The following have been elected officers of the medical staff of the Marks Nathan Jewish Orphan Home: President, Dr. L. J. Pritzaker; vice-president, Dr. M. Meyerovitz; secretary, Dr. Melchior Whise; directors, Drs. T. P. Sacks, H. J. Davis and T. B. Diamond.——Dr. William Cuthbertson was thrown from his automobile, in a collision with a wagon recently, and suffered severe contusions.——Dr. J. E. Burkeley is reported to have been injured in the wreck of a suburban train on the Lake Shore Road, near Hammond, January 18.——Dr. D. Hally-Smith has sailed for Europe.——Dr. and Mrs. Edward J. Streeter, who are now in Vienna, expect to return to Chicago in the early spring.——Dr. Frank Conroy has been seriously ill from accidental gas asphyxiation.——Dr. A. Doe has been made a knight of the Order of St. Olaf by King Hakon of Norway.

INDIANA.

Schlatter Fined.—An individual calling himself "Schlatter, the divine healer," who was in Escanaba, Mich., earlier in the year, was arrested at Bloomington recently for practicing medicine without a license, and said to have been found guilty and fined $25 and costs. The defendant denied that he was practicing medicine and said that he healed merely by faith, but promptly paid the fine.

State Insane Hospital Report.—Dr. Samuel E. Smith, superintendent of the Eastern Indiana Hospital for the Insane, Easthaven, Richmond, in his report for the biennial period ended October 31, states that the number of patients in the institution October 31 was 731, only nine fewer than the highest enrollment during the two years covered by the period. He further reports that there is little disparity between the number of men and women afflicted with mental disorders. During the biennium 82 deaths occurred, of which two were suicides. He states that there has been exceptional freedom from epidemics and infectious diseases, and urges needed relief from the present crowded condition of the institution, which will be relieved to a certain extent by the erection of the hospital for epileptics at New Castle and the new hospital for the insane at Madison.

KANSAS.

State Board Working for Good Laws.—The State Board of Health is asking the legislature for necessary financial aid to do the work that the board realizes it should do. It asks especially for a laboratory of hygiene in Topeka, with a bacteriologist and an assistant, and $2,000 a year aside from salaries for the maintenance of the laboratory. The board also asks for the creation of a bureau of vital statistics so as to place Kansas among the registration states. The bill is now in the legislature, and is based on the one recommended by the division of vital statistics of the census bureau. It is also urging a dairy law giving the board sanitary control of the dairy products and dairy herds, as well as for the control of cold storage of poultry, game, fish, etc. It is evident that the board is anxious that Kansas shall not be in the rear in protecting the health of the people of the state.

LOUISIANA.

The New Touro Infirmary.—The new Touro Infirmary, New Orleans, was opened to receive patients, January 1. The following medical staff has been appointed: Dr. Rudolph Matas, surgery; Dr. William Kohlmann, gynecology and obstetrics; Dr. Joseph D. Weis, medicine; Dr. J. Numa Roussel, dermatology; Drs. Paul L. Reiss and M. Feingold, eye, ear, nose and throat; Dr. Roy M. Van Wart, neurology; Dr. Erasmus D. Fenner, pediatrics; Dr. E. S. Hatch, orthopedics, and Dr. Oliver L. Pothier, pathology.

Eye, Ear, Nose and Throat Hospital.—On the recommendation of Dr. Arthur W. DeRoaldes, surgeon-in-chief of the Eye, Ear, Nose and Throat Hospital, New Orleans, the following medical staff has been appointed: Drs. Ernest A. Robin, Timothy A. Duggan and Victor C. Smith, eye department; Drs. Homer Dupuy, A. Benjamin Gaudet and Lieven DePoorter, ear, nose and throat department; Dr. E. S. Keitz, resident surgeon; Dr. Isadore Dyer, consulting dermatologist, and Drs. Henry E. Menage and Ralph Hopkins, assistant consulting dermatologists.

MAINE.

Physicians in Legislature.—In the Maine House of Representatives six members are physicians.

Measles Epidemic.—An epidemic of measles is said to be raging at Fort McKinley on Diamond Island, Portland Harbor.

Violent Deaths.—The report by the State Board of violent deaths during 1906 shows 2 cases of homicide and 59 cases of suicide, as compared with 47 in 1905, and 180 cases of violent deaths.

New Hospital.—The Webber Hospital Association, Biddeford, has leased for temporary use the Freeman residence. The house, which contains twelve rooms, will be equipped and the hospital will be opened as soon as practicable.

County Society Meeting.—At the thirteenth meeting of the York County Medical Society, held in Biddeford, the following officers were elected: Dr. M. Hubbard Ferguson, Biddeford, president; Drs. Charles W. Pillsbury, Saco, and Roland S. Gove, Sanford, vice-presidents; Dr. Clarence E. Thompson, Saco, secretary; Dr. Harry L. Prescott, Kennebunk Port, treasurer, and Drs. Jesse D. Haley, Saco, Charles W. Blagdon, Sanford, and Harry I. Durgin, Eliot, censors.

State Academy Meeting.—The seventy-eighth annual meeting of the Maine Academy of Medicine and Science was held in Portland, December 12. The academy abolished the system of sections under the charge of vice-presidents, and adopted a uniform fee of $3 for all members. The following officers were elected: Dr. Charles W. Bray, Portland, president; Dr. Herbert F. Twitchell, Portland, vice-president; Dr. Herbert T. Clough, Bangor, treasurer, and Drs. Edwin M. Fuller, Bath, and Albert L. Stanwood, Rumford Falls, James F. Hill, Waterville, and Mr. William Chamberlain, Bath, trustees.

MARYLAND.

Personal.—Dr. Harry Adler has been elected a member of the board of trustees of the endowment fund of the University of Maryland, to fill the vacancy occasioned by the death of Dr. I. E. Atkinson.——Dr. John D. Blake has resigned the presidency of the Crescent Club after a service of 17 years.

Presentation of Portrait to Johns Hopkins.—The group portrait of Drs. Welch, Osler, Kelly and Halsted, which was painted in London by John S. Sargent, was unveiled in McCoy Hall, Johns Hopkins University, January 19. The painting was presented by Miss Mary Garrett and accepted by President Ira Remsen on behalf of the University. Mr. Royal Cortissoz and Dr. William H. Welch made short addresses.

Emergency Hospital.—The Emergency Hospital at Easton was opened January 16. The following physicians constitute the hospital staff: Dr. J. M. Bateman, chairman; Dr. Edward R. Trippe, general diseases; Drs. Charles F. Davidson and Philip L. Travers, surgery; Dr. Hughlett Hardcastle, eye, ear and throat diseases. The hospital, located in the former Hotel Norris, has a public ward for white men with six beds; one for white women with 14 beds, and also beds for girls and children and for colored males and females. A number of free beds are provided.

Centennial of University of Maryland.—A mass meeting of the regents, faculties and alumni of the University of Maryland was held January 22, the object being to arouse interest in the coming centennial. Dr. Henry M. Wilson, class of 1850, presided, and addresses were made by Drs. John C. Hemmeter, Hampson H. Biedler, Samuel C. Chew, F. J. Gorgas, Charles Caspari, Jr., and by Hon. John P. Poe and President Thomas Fell, the two last named being members of the new department of arts and science. A collation followed.

Baltimore.

Hospital Report.—The Presbyterian Hospital reports that during 1906 an average of 136 patients a day were treated. A great number of immigrants were under treatment, some of whom were deported on account of contagious diseases.

More Air for Patients.—Balconies are to be built from private wards "B" and "C" at the Johns Hopkins Hospital to allow the patients the benefits of sunlight and open air. Permanent roofs will be placed over bridges leading from wards "D," "F," "G" and "H," which have been roofed with canvas. Patients will thus be able to sleep out of doors at night.

MICHIGAN.

For Regent of University.—Dr. Fleming Carrow of Detroit, we understand, is a candidate for the regency of the University of Michigan. Dr. Carrow has been connected with the university for 16 years as one of its professors.

MINNESOTA.

Personal.—Dr. and Mrs. Frank W. Bullen, Eveleth, left January 1 for the East and Germany.——Dr. Donald B. Pritchard, Winona, is reported to be ill with typhoid fever.——Dr.

William J. Mayo, Rochester, has been tendered a position on the State University board, vice Dr. Strickler.——Dr. John E. Campbell, St. Paul, has been reappointed city physician.

Contagious Diseases.—Dr. Blakeslee, Crookston, physician of Beltrami County, reports that there are at present 17 cases of smallpox in the county; that all the patients are in the Isolation Hospital, and that several other individuals are under observation. Most of the cases come from the lumber camps north of Bemidji.——Several cases of smallpox are reported in the vicinity of Poplar, Cass County.——Itasca Camp, No. 13, located at Turtle Lake, has been quarantined by the health authorities of Deep River on account of smallpox.——Minneapolis reports 11 cases of smallpox in school children.——Two homes in east Wing River are under quarantine on account of smallpox.——Two houses in Eveleth are quarantined on account of scarlet fever, and two on account of diphtheria.——Scarlet fever is reported to be epidemic at Silver Lake.

MISSOURI.

Medical Society Election.—At the annual meeting of the St. Louis Medical Society, held December 29, the following officers were elected: Dr. John C. Morfit, president; Dr. Thomas A. Hopkins, vice-president; Dr. Davis Forster, recording secretary; Dr. Cyrus E. Burford, corresponding secretary, and Dr. Charles J. Orr, treasurer.

State Board Reorganization.—At the annual meeting of the State Board of Health, January 8, a reorganization was effected by the election of the following officers: President, Dr. Robert H. Goodier, Hannibal; vice-president, Dr. John T. Thatcher, Oregon; secretary, Dr. J. Alfred B. Adcock, Warrensburg, and state bacteriologist, Dr. J. A. McConnell, St. Louis.

Substitute for Coroner.—At the request of the City Hospital Alumni Society, Senator Jeff J. Prendergast, St. Louis, will present a bill to the General Assembly abolishing the office of coroner and substituting therefor that of medical examiner. Under the provisions of the bill the examiner will report the result of investigation to the prosecuting officer of the county in which the death occurs.

Contagious Diseases.—The health officer of Kansas City reports 29 cases of diphtheria.——Diphtheria is reported to be epidemic in the district around the Franz Sigel and Shields schools, St. Louis.——Several cases of smallpox are reported at Tuckahoe, and at least one rural school has been closed on account of diphtheria.——For the first winter in several years no smallpox has appeared in St. Louis County, and no scarlet fever has been reported to the health office.

Personal.—Drs. W. L. Gist, Harold R. Kuhn and James P. Henderson have been appointed emergency surgeons of Kansas City.——Dr. John W. Angle, for more than five years assistant physician of State Hospital No. 3, Nevada, has resigned.——Dr. Walter H. Morris, St. Joseph, was rendered unconscious December 19 by the accidental inhalation of natural gas which had escaped.——Dr. John M. Bell, St. Joseph, has been commissioned examining surgeon for the pension department, vice Dr. John W. Leonard.——Dr. Philip Scholz, St. Louis, had a diamond stud, valued at $600, stolen from him on a crowded street car, December 23.——Dr. John G. Love, Sedalia, has been appointed assistant surgeon at State Hospital No. 3, Nevada.

Society Meetings.—The Grand River Medical Society held its annual meeting at Hamilton, December 7. The following officers were elected: Dr. Carl C. Leeper, Braymer, president; Drs. Thomas P. Oven, Brookfield, and Haynie M. Grace, Chillicothe, vice-presidents; Drs. Reuben Barney, Chillicothe, secretary; Dr. John L. Burke, Laclede, treasurer, and Dr. Byron N. Stevens, Chillicothe, curator.——At the annual meeting of the Pike County Medical Society the following officers were elected: President, Dr. James W. Dreyfus, Louisiana; vice-presidents, Drs. J. E. Bankhead, Marion O. Biggs, Bowling Green, and C. A. Smith, Annada; secretary, Dr. R. Graham Hereford, Louisiana; assistant secretary, Dr. Charles L. Bankhead, Paynesville; treasurer, Dr. T. Guy Hetherlin, Louisiana, and censors, Drs. Bankhead, Hetherlin, Biggs, Kennedy and Treadway.

Hospital Fund Divided.—The funds collected by the St. Louis Saturday and Sunday Association amounted altogether to $37,134.81, and were apportioned as follows to 11 hospitals: St. Louis Children's Hospital, $7,846.30; St. Mary's Hospital, $5,674.90; Martha Parsons Hospital for Children, $4,254.25; Missouri Baptist Sanitarium, $4,231.92; St. Louis Mullanphy Hospital, $3,950; Mount Saint Rose Tuberculosis Sanatorium, $3,585.12; Jewish Hospital of St. Louis, $2,828.21; St. Luke's Hospital, $2,414.72; Evangelical Deaconess Hospital, $1,392.93; St. Louis Baptist Hospital, $493.95; St. Louis Protestant Hospital, $462.77. The amount of the donation was governed by the amount of free work done by the hospital. The society also made donations of $750 to the Skin and Cancer Hospital, $600 to the Bethesda Home for Incurables and $250 to the Provident Hospital.

MONTANA.

Personal.—Dr. George H. Wells, Butte, has been seriously ill with blood poisoning.——Dr. Thomas J. Murray, Butte, gave a dinner recently in honor of Drs. William C. Riddell and George H. Barbour, Helena, and Dr. Francis J. Adams, Great Falls.——Drs. Francis B. Atkinson, John V. Carroll and Jesse H. Russell have been appointed physicians for Chouteau County for the Fort Benton district; Drs. Charles F. Hopkins, Chinook, and Dudley for the Chinook district; Dr. William F. Hamilton for the Havre district, and Dr. A. P. Rooney for the Harlem district.——The home of Dr. Guy D. Bryant, Butte, was entered December 31 and money and jewelry taken.

NEBRASKA.

Tuberculosis Ward Planned.—General plans for the Tuberculosis ward at the Douglas County Hospital, Omaha, have been approved by the county board.

Proposed Hospital for Lincoln.—At a meeting of the Kansas synod of the Lutheran Church, held at Topeka, action was taken favoring the conversion of the Tabitha home orphanage, Lincoln, into a great church hospital.

Society Meetings.—At the annual meeting of the Valley County Medical Society, held in Ord, January 18, the following officers were elected: Dr. Minerva M. Newbecker, Ord, president; Dr. Charles W. Weekes, Scotia, vice-president; and Dr. C. J. Miller, Ord, secretary-treasurer.——At the annual meeting of the Gage County Medical Society, held in Beatrice, January 1, the following officers were elected; president, Dr. Clifford P. Fall, Beatrice; Dr. Frank E. Osborn, vice-president, Beatrice; Dr. Ira N. Pickett, Odell, secretary-treasurer; Drs. George H. Brash, John I. McGirr and C. A. Bradley, Beatrice, censors; and Dr. Harry M. Hepperlen, delegate to the state association.

NEW YORK.

Canine Quarantine.—City Island has been placed under canine quarantine by order of the acting commissioner of agriculture.

Gifts to Nassau Hospital.—This hospital, located at Mineola, L. I., is to be the recipient of a building, for operations, to cost $10,000 from John Bird. Commodore Frederick C. Bourne will present the hospital with a laboratory and dispensary to cost $6,000.

Help Hospitals.—The Good Samaritan Hospital at Suffern, N. Y., has received a liberal check from a Haverstraw Sunday school.——A benefit has been given under the auspices of the Woman's Auxiliary for the Nyack Hospital of Nyack, N. Y.

Non-Poisonous Embalming Fluid.—The State Board of Embalmer Examiners have adopted the regulations which have been approved by the State Board of Health and have the force of law. These regulations prohibit the use or sale in the state of any fluid containing arsenic, zinc, mercury, lead, silver, antimony, chloral or any poisonous alkaloid, or one that is not a thorough disinfectant in the proportions ordinarily used in embalming.

Railway Fatalities.—The report of railroad commissioners, just transmitted to the legislature, shows that during 1906, 959 persons were killed on the steam roads of the state and 2,105 injured, against 903 killed and 1,961 injured in the preceding year. One passenger was killed for each 6,470,685 carried. The number of employés killed was 357, and the number injured 1,424, as against 336 killed and 1,344 injured the previous year. On the street surface roads 317 were killed and 2,014 injured during the year 1906, as against 240 killed and 929 injured in the previous year. The increase in injured was mostly in Greater New York. Of the injuries among passengers 315 were the result of getting off of cars in motion and 440 of rear-end collisions.

New York City.

Orphan Asylum Quarantined.—The Brooklyn Orphan Asylum has been placed under strict quarantine following the discovery of nine cases of scarlet fever within two weeks.

Growth of Jewish Hospital.—The Jewish Hospital for Deformities and Joint Diseases, which was opened November 4, has outgrown its present quarters and has purchased the adjoining property. This building will be remodeled as soon as possible.

Hospital Benefit.—A musical and dance was given to raise funds to meet the maintenance expenses of the Williamsburg

Hospital. In addition to the regular work this hospital conducts a postgraduate school of medicine and a training school for nurses.

Harvey Society Lecture.—The seventh lecture in the Harvey Society course will be by Prof. Edmund B. Wilson of Columbia University at the New York Academy of Medicine, Saturday evening, January 26, at 8:30 o'clock, on "Recent Studies of Heredity." All interested are cordially invited to be present.

Attempt to Burn Hospital.—Shortly after the discharge of four porters from the Montefiore Home for Consumptives, a fire was discovered in one of the dormitories which had been started by a pile of clothing saturated with kerosene. Authorities arrested the four men. The fire was discovered before much damage had been done.

New Postgraduate School.—The Brooklyn Postgraduate Medical School has been organized with the following officers: Dr. William E. Butler, president; Dr. Lefferts A. McClelland, secretary, and Dr. G. Morgan Muren, vice-president. The school is located at Bedford Avenue and South Third Street, Brooklyn, has connected with it the Williamsburg Hospital, and offers clinical facilities at all the other hospitals of the city.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending January 12, 446 cases of tuberculosis, with 162 deaths; 291 cases of diphtheria, with 51 deaths; 234 cases of scarlet fever, with 8 deaths; 204 cases of measles, with 6 deaths; 60 cases of whooping-cough, with 4 deaths; 43 cases of typhoid fever, with 8 deaths; 21 cases of cerebrospinal meningitis, with 9 deaths; 154 cases of varicella and 3 cases of smallpox, making in all 1,456 cases, with 248 deaths.

Organize Against Noise.—The Society for the Suppression of Unnecessary Noise has recently been organized and will soon be incorporated at Albany. Its work will be extended to every form of noise that is not essential to the commerce of the city. Many well-known men have accepted offices and places in the directorate of the society, which augurs well for its success. During the meeting a telegram was received from Congressman William S. Bennett telling of the passage in the House of his bill putting a stop to unnecessary noises on rivers and in harbors.

In Memory of Dr. Mary Putnam Jacobi.—The Womans' Medical Association of New York City held a memorial meeting in honor of the memory of Mary Putnam Jacobi at the Academy of Medicine, January 4, at which it was announced that this association had undertaken to raise $25,000 to establish a Mary Putnam Jacobi fellowship, the income of which was to be used in defraying the expenses of some woman medical student in whatever country she might choose to spend the money. Dr. William Osler was one of the speakers and said that the scientific character of many of Dr. Jacobi's contributions to medical literature gave new distinction to the work of women physicians in this country and had done much to allay the animus which had so long kept women out of medical schools and societies. Others who eulogized Dr. Jacobi were Dr. Elizabeth M. Cushier, Mrs. Florence Kelley, Dr. Felix Adler, Dr. Charles L. Dana and Mr. Richard Watson Gilder.

OHIO.

Medical Inspection of Schools in Cincinnati.—Cincinnati is undergoing the exciting complication of her first medical inspection of schools under the health office.

Increased Duties and Salaries.—The board of health of Cincinnati has increased the salary of the district physicians from $25 to $50 a month, and has increased their duties by making them medical inspectors of public schools and of contagious diseases in their respective districts.

Society Elects Officers.—The Obstetrical Society of Cincinnati at its regular annual meeting elected the following officers for the ensuing year: President, Dr. William Gillespie; vice-president, Dr. M. A. Tate; recording secretary, Dr. J. H. Landis; corresponding secretary, Dr. E. S. McKee; treasurer, Dr. L. S. Colter.

Dismissal of Dr. Holmes.—The medical profession of Cincinnati, as well as the laity, are indignant over the dismissal of Dr. C. R. Holmes, who was serving in an advisory capacity to the board of public service in regard to the building of the new city hospital. Dr. Holmes has devoted a great deal of time, money and ability to the work, and is now said to be dismissed without so much as thanks.

PENNSYLVANIA.

Pittsburg Epidemic.—Dr. J. F. Edwards, superintendent of the Pittsburg bureau of health, announces that there are over 1,000 cases of typhoid in the city of Pittsburg, caused, it is believed, by the poor water supply.

Pollution of the Schuylkill.—The State Department of Health has sent a communication to the city of Reading requesting that notice be taken of the refuse emitting from local industries and polluting the Schuylkill, to which it is conveyed through the storm water sewers.

Appropriations for State Board of Charities.—In its biennial report to the legislature the State Board of Charities recommends that $12,765,382.68 be appropriated to the public and private charities of Pennsylvania for the next two years. Of this the board recommends that $6,111,982 be appropriated to the state institutions, $1,517,400 to the semi-state institutions, $4,561,000 to the hospitals and $575,000 to the homes. The care and support of the defective and delinquent classes, the institutions for the blind, deaf and dumb, and for feeble-minded children and the houses of refuge are included in the semi-state institutions.

Condition of Insane Asylum Satisfactory.—The State Lunacy Commission has completed its investigation of the State Insane Asylum at Warren, and has found that it is the best in the state, although having 446 patients too many. The asylum has 598 male inmates and 582 women now under treatment. Despite the excess of patients all were found to be comfortably quartered, and showed every evidence of the best physical care and treatment for their afflictions. The only complaint heard by the commissioners was regarding the commitment to the institution as indigents of persons well able to pay for private treatment, there being 30 such cases from Erie County alone.

Investigation of State Hospital.—The lunacy commission has made a thorough investigation of the conditions at the Danville Hospital for the Insane, inquiring into the alleged overcrowded condition of the institution, the condition of the buildings, the management, the salaries paid, the treatment of employés, and particularly whether the state is being defrauded, as has been intimated, by the care of supposedly indigent insane persons who have means or friends able to assume responsibility for their maintenance. The terribly overcrowded condition of the institution was brought out in the examination of Dr. Hugh B. Meredith, head of the institution, who said that the hospital had accommodation for 500 male and 350 female patients, but that at the present time there are 683 men and 613 women in the place, making it necessary for many inmates to sleep in corridors and quarters that are entirely unfit. It was brought out that the head male nurse received a salary of only $37, and the head female nurse $27 a month.

Personal.—Dr. Samuel F. Chapin, who has been surgeon of the Pennsylvania Soldiers and Sailors' Home almost since its foundation, has resigned on account of age and ill-health. He has been succeeded by Dr. William B. Washabaugh, formerly assistant surgeon at the institution.——Drs. Carl Kirschner and J. E. McCuaig, Erie, are convalescent after severe attacks of influenza.——Dr. Charles L. Templeton, resident physician of the Reading Hospital, has resigned.——Dr. F. G. Bryant, Scranton, who has been ill with diphtheria, has recovered.——Dr. H. M. Neale, Upper Lehigh, is recovering from an attack of influenza.——Dr. S. C. Honeywell, Norristown, lost a diamond pin, gold watch and chain and $24 in cash by burglary December 30.——Dr. Leon Gottschalk, Chester, has been appointed physician at the State Quarantine Station, Marcus Hook, vice Dr. Harry Horning, resigned.——Dr. B. Frank Price, Braddock, is reported to be seriously ill.——Dr. A. V. Chessrown, Pittsburg, has been re-elected jail physician.——The following have been appointed physicians for the poor of Harrisburg: Drs. O. A. Newman, J. Edward Dickinson, S. F. Hassler, E. S. Meals, C. R. Phillips, H. Ross Coover, J. W. Shope and E. O. Nicohemus.——Dr. Elias G. Roos, Scranton, who has been ill with typhoid fever, is convalescent.——Dr. W. J. Rugh, Greensburg, sustained severe contusions in a collision between his automobile and a street car in Pittsburg.——Dr. H. Graham has been elected president of the board of health of Kennett Square.——Dr. John J. Singer has been appointed jail physician of Greensburg.——The following physicians have been appointed to care for the poor of Dauphin County: Drs. J. M. Peters and B. T. Dickinson of Steelton; Dr. M. O. Putt, Oberlin, and Dr. Harry McDaniel, Highspire.——Dr. George W. McCafferty, for 13 years assistant physician at the State Hospital for the Insane, Norristown, has resigned. His associates in the men's department presented

him with a silver tea service.——Dr. C. H. Weimer has resigned as first resident physician at the Miners' Hospital, Fountain Springs, the resignation to take effect February 1. He will be succeeded by Dr. W. T. Davies.——Dr. G. Mord Neuburger, Hazleton, has returned from Europe.——Dr. E. Marshall Harvey, Media, has been re-elected physician for the Home for the Poor, Lima.——Dr. Frank J. Evans, Chester, was given a handsome gold badge by the Firemen's Relief Association of Chester, January 9.——Dr. Mahlon H. Beary and family, Allentown, have gone to Florida for two months.——Dr. and Mrs. E. A. Van Scoy, Bradford, have gone to Porto Rico for the balance of the winter.

Philadelphia.

New Jefferson College Hospital.—It is announced that the new Jefferson College Hospital will soon be ready for occupancy. The building is absolutely fire-proof, eight and a half stories in height, and covers an area of 27,200 square feet.

Medical Staff Appointed.—The medical staff for the American Hospital for Diseases of the Stomach is made up as follows: Drs. Lewis Brinton, John B. Deaver, Ludwig Loeb, John B. Shober, Francis B. Jacobs, Isaac R. Strawbridge, James C. Wilson, James Thorington and L. Napoleon Boston.

Beneficiaries of Charity Ball.—The beneficiaries of the twenty-seventh annual charity ball, which will be held Wednesday, January 30, are the children's surgical wards of the Hospital of the University of Pennsylvania, the maternity department of the Jefferson Medical College Hospital, the Children's Aid Society and the Polyclinic Hospital.

Medical Club Elects Officers.—The following officers of the Medical Club have been elected for 1907: President, Dr. L. Webster Fox; first vice-president, Dr. Wharton Sinkler; second vice-president, Dr. James B. Walker; secretary, Dr. J. Gurney Taylor; treasurer, Dr. J. Lewis H. Adler, Jr.; governor (term five years), Dr. E. E. Montgomery.

Deaths of the Year.—The total number of deaths in Philadelphia during 1906 was 27,372, or 18.63 per 1,000. This compares unfavorably with the rate for 1905, which was 17.25 per 1,000. During the year 3,160 deaths were reported from tuberculosis, 2,693 from pneumonia, 2,296 from heart disease, 2,031 from intestinal diseases in children under 2 years old, and 1,061 from typhoid fever.

Society Elects Officers.—The Philadelphia County Medical Society has elected the following officers: President, Dr. James B. Walker; vice-presidents, Drs. William S. Newcomet, Joseph O'Mally, Wendel Reber, Robert Chase, M. Karpeles and Franklin Brady; secretary, Dr. William S. Wray; assistant secretary, Dr. Ross Skillern; treasurer, Dr. Collier L. Bower; censor, Dr. Charles A. E. Codman; district censor to the Pennsylvania State Medical Society, Dr. Albert M. Eaton.

Personal.—Dr. Henry Neffman has resigned from the board of health.——Dr. Wiliam A. Stecher has been appointed director of physical training in the public schools.——Dr. Francie E. Patterson has been appointed chief police surgeon, vice Dr. William M. Angney, deceased.——Dr. F. H. McFarland was thrown from his carriage in a runaway acident, January 8, and fractured his right arm and leg.——Dr. W. Joseph Hearn, whose skull was fractured some time ago, has recovered and left the hospital.——Dr. E. C. Town, who was recently operated on for appendicitis, is reported to be convalescent.

College of Physicians Elects Officers.—The following officers and committees of the College of Physicians have been elected for 1907: President, Dr. James Tyson; vice-president, Dr. G. E. de Schweinitz; secretary, Dr. Thomas R. Neilson; treasurer, Dr. Richard H. Harte; librarian; Dr. Frederick P. Henry; censors, Drs. Richard A. Cleemann, S. Weir Mitchell, Horace Evans, Louis Starr; councilors (to serve until January, 1910), Drs. S. McC. Hamill, H. R. Wharton; committee of publication, Drs. G. G. Davis, Thompson S. Westcott, William Zentmayer; library committee, Drs. George C. Harlan, Francis X. Dercum, Charles A. Oliver, William J. Taylor, S. Weir Mitchell; committee on Mutter museum, Drs. John Brinton, George McClellen, J. Allison Scott; hall committee, Drs. John K. Mitchell, Thomas H. Fenton, B. Alexander Randall, E. Hollingsworth Siter, A. O. J. Kelly; committee on directory for nurses, Drs. Wharton Sinkler, James C. Wilson, James Ingham.

TENNESSEE.

Personal.—Dr. Thomas J. Happel, Trenton, has been reappointed a member of the State Board of Medical Examiners.——Dr. Frank D. Raymond, Memphis, who has been seriously ill in New York, is reported to be gaining steadily.——Dr. William T. Hubbs, Camden, was thrown from his buggy December 16, spraining his arm and shoulder and injuring his hip.——The colored auxiliary of the anti-tuberculosis organization of St. Paul's church, Nashville, has elected Dr. Robert F. Boyd, president.——Dr. Fred C. Watson, Lexington, has been appointed house surgeon at the Lying-in Hospital, New York City.

Staff Appointed.—At the meeting of the board of governors of the Knoxville General Hospital the following staff was re-elected: Drs. John M. Boyd and David H. Williams, consultants; Drs. Wm. R. Lockett, Wm. Delpuech, Henry P. Coile and Francis J. Hackney, medicine; Drs. Charles M. Drake, Walter Luttrell, Samuel R. Miller and William R. Cochrane, surgery; Drs. Charles E. Lones, R. Haller Newman, Robert P. Oppenheimer and Henry J. Kelso, gynecology; Drs. Howard A. Ijams and J. Foster Scott, obstetrics; Drs. John H. Kincaid and Achilles E. Foster, eye, ear, nose and throat; Dr. Douglas Caulkins, diseases of children, and Dr. William D. Richmond, pathology.

TEXAS.

New Medical Journal.—The students of the medical department of Fort Worth University have commenced the publication of a monthly paper, to be known as the *Medical Mirror*, the first issue of which appeared in December. It is to be the official organ of the students' medical society.

The Campaign Against Tuberculosis.—The formal campaign against consumption in Texas began January 4, in San Antonio, with the opening of the American Tuberculosis Exposition, which continued for one week. The inaugural address was given by Hon. Thomas H. Franklin, who was followed by Dr. William S. Carter, dean of the Medical Department of the University of Texas, Galveston.

Fire Losses.—Dr. E. H. B. Steele, Jennings, suffered a loss of about $3,000 in an incendiary fire December 29. Three weeks earlier his office and its contents were burned.——Dr. Samuel W. Rimmer suffered a loss of more than $10,000 in the recent fire at San Saba. He carried no insurance.——At the recent fire in Nacogdoches Dr. Albert A. Nelson and Dr. William I. M. Smith suffered a total loss, with no insurance, and the offices of Drs. Felix R. Tucker, Joel H. Barham and Ashton B. Smith were entirely destroyed.

Personal.—Dr. William M. Brumby, Houston, has succeeded Dr. George R. Tabor as state health officer.——Dr. E. Matt. Thomas, Georgetown, has been appointed health officer of Williamson County.——Dr. A. Philo Howard, St. Louis, has been appointed local surgeon for the International & Great Northern Railroad, with headquarters at Houston.——Dr. George R. Tabor, the retiring state health officer, will make his home in Austin.——Dr. Vene P. Armstrong, Dallas, has been appointed quarantine inspector at Eagle Pass, and Dr. J. H. Florence, Dallas, has been reappointed quarantine inspector at Brownsville, his present station.

Report of Health Officer.—The biennial report of State Health Officer Tabor for the period ended Aug. 31, 1906, shows that the total amount expended for the biennium was $45,372.41, as against $51,903.70 for the previous period of two years, and this notwithstanding the strict quarantine against yellow fever and the necessarily heavy expense attached to its thorough operation. He noted the increased prevalence of typhoid fever throughout the state, and gave a complete history of the part played by Texas in keeping the state free from yellow fever during the prevalence of the disease in New Orleans last year.

Hospital Notes.—Steps have been taken for the enlargement of the Kings Daughters' Hospital, Temple, to double its present capacity, at a cost of about $20,000. The new addition will contain about 40 rooms.——All Saints' Hospital, Fort Worth, was formally opened December 27 by Bishop A. C. Garrett of Dallas.——It is reported that the Santa Fe System will commence work this month on the new company hospital at Temple, to cost $100,000.——The physicians of McKinney, Collin County, have organized the Collin County Sanitarium Association and propose to build, equip and operate a first-class sanitarium. The following officers have been elected: Dr. John E. Gibson, president; Dr. J. E. Hunter, vice-president; Dr. W. Todd Largent, secretary, and Dr. D. K. Houston, treasurer, and Drs. William C. Bryant, Thomas W. Wiley, Edwin L. Burton, together with the officers, directors.

Society Meetings.—The North Texas Medical Society held its annual session in Dallas, December 12, and elected the following officers: President, Dr. Frank D. Boyd, Fort Worth; vice-president, Dr. Joseph W. Largent, McKinney; secretary, Dr. Stephen A. D. Moore, Van Alstyne, and treasurer, Dr. Carey A. Gray, Bonham. The society passed resolutions urging every constituent society in the district to take prompt

action, as urged by the state insurance committee. The effect of this resolution will be to have county societies take concerted action in securing a minimum fee of $5 for medical examinations for all old-line companies.——The Seventh Councilor District Medical Society held its sixty-fourth quarterly meeting at Austin, December 20, and elected the following officers: President, Dr. G. L. Robinson, Leander; Dr. Matthew M. Smith, Austin, secretary-treasurer, and Dr. E. Matt Thomas, Georgetown; Drs. S. E. Hudson and Homer B. Hill, Austin; Dr. Andrew J. Sibley, Creedmore, and Dr. James C. Anderson, Granger, censors.

VERMONT.

State Board Elects Officers.—At the annual meeting of the Vermont State Board of Medical Registration the following officers were elected: President, Dr. F. H. Godfrey; vice-president, Dr. S. W. Hammond; secretary, Dr. W. Scott Nay; treasurer, Dr. E. B. Whitaker. The other members of the board are Drs. J. S. Hill, G. I. Forbes and A. E. Parlin. The next meeting will be held in Burlington, July 9-11.

GENERAL.

The New Naval Hospital.—The new naval hospital at Annapolis is now practically completed and ready to be turned over to the government. It is located on the government farm overlooking the Severn and cost approximately $250,000. The original plan was for a group of 10 buildings, but the appropriation necessitated a reduction to five, which are three colonnade-connected wards, the administration building and the power plant. Some grading and gardening work alone remain to be done.

Another Clean Newspaper.—The Washington *Herald* is a new daily newspaper in Washington, D. C., having been in existence only about three months, but already it has a sworn circulation of over 30,000 copies. So far, this is not an important item, but when we state that it is one of the newspapers that has come out boldly for clean advertising and against "patent-medicine" ads, it is different. Quoting from the copy before us, the *Herald* says that it proposes to be "clean in its advertising columns, as well as its news. It has rejected unclean advertising from the first isuse. It wants business, but only clean business." There are now some forty or fifty newspapers which refuse to carry any kind of "patent-medicine" advertisements, and it is encouraging to note that the number is increasing.

American Standard for Tetanus Antitoxin.—At the recent meeting of the Society of American Bacteriologists, held in New York, Dec. 27-28, 1906, the committee on the standardization of serums made the following report, based largely on the work of M. J. Rosenau, director of the Hygienic Laboratory, Washington, D. C., and it was unanimously adopted: Tetanus antitoxin should be standardized by the tetanus toxin furnished by the Public Health and Marine-Hospital Service. The unit is 10 times the least amount of serum necessary to save the life of a 350-gram guinea-pig for 96 hours against the official test dose of the standard toxin. The test dose is 100 minimal lethal doses of a precipitated toxin preserved under special conditions at the Hygienic Laboratory of the Public Health and Marine-Hospital Service. It was decided that the minimal immunizing dose for a case of possible infection through a wound should be 3,000 of such units. It was decided that after April 1 the new unit should be adopted by all producers of tetanus antitoxin.

Long Island Medical Journal.—Another journal has been launched, the *Long Island Medical Journal*, edited by Dr. Paul M. Pilcher, and, according to the editorial introduction, the property of the Associated Physicians of Long Island. It is to take the place of the Transactions which have been published by the society for several years. The journal contains some excellent matter and, so far as the reading pages are concerned, is a credit to all connected with the enterprise. When we turn to the advertising pages, however, there is a difference. In the first place, it is very unsual for a new journal to secure 39 pages of advertising for its first issue. This shows enterprise. So far as quantity is concerned, the business management of the journal is to be congratulated, but when we come to the quality—well, it ought to be passed over in silence. The typical nostrums are here in all their glory. Antikamnia, with its "Cheer thy spirit with this comfort," occupies its usual prominent position at top half of page. Then there are Vin Mariani, with its offer of a reward of $1,000 for any false statements concerning its purity; the mud poultice, Antiphlogistine, which is being bought over the counter daily by the public and used for every thing, from a "blind" boil to pneumonia—thanks to the medical profession; Dahl's Dyspepsia Cake, which is a new one to us, but one that ought to take the public rapidly if the physicians will only help a little; Hydra-Casca Comp. for malnutrition, etc. Besides these, the following appear in the advertising pages of this journal, which is supposed to be published solely in the interests of the intelligent physicians of Long Island: Fellows' Hypophosphites; Angier's Petroleum Emulsion; Turck's Compound Emulsion; Chionia; Peacock's Bromides; Seng; Cactina Pilletts; Anedemin, that delightful nostrum from Winchester, Tenn.; Hydroleine; Hayden's Viburnum Compound; Pepto-Mangan (Gude); Glyco-Heroin; Gray's Glycerine Tonic; Celerina; Aletris Cordial; Sal Hepatica; that thoroughly ethical proprietary that is advertised in practically every newspaper in the country, California Fig Syrup; Sanmetto; Glyco-thymoline; Listerine; Colchi Sal, et al. The intelligent members of the Associated Physicians of Long Island ought to be proud of the contents of the advertising pages of their new journal. The business management is certainly proud, for it would be able to supply physicians with this journal "free, gratis and for nothing," and then make a profit. Some zealous reformer is liable to make the remark that this journal must count on the nostrum men for its support rather than on its subscribers.

CANADA.

Modified Milk in Montreal.—A sanitary milk plant has been installed in Montreal, and the modification of milk for infants will be carried out on the Walker-Gordon system.

Responsibility for Typhoid Outbreak.—The provincial board of health of Quebec places the responsibility for the typhoid outbreak in Montreal on the Montreal Water and Power Company.

Vital Statistics.—The death rate for Winnipeg during 1906 was 16.138 per 1,000 of the city's population. The total number of deaths was 1,630. The deaths in Vancouver in 1906 were 424, as against 444 in 1905. One-ninth of the number was from tuberculosis.

Military Appointments.—Lieutenant-Colonel H. S. Birkett, M.D., A.M.C., Montreal, has been appointed principal medical officer for the Quebec command to replace Dr. C. W. Wilson, resigned. Lieutenant-Colonel George Stirling Ryerson, Toronto, is transferred to the reserve of officers. Lieutenant-Colonel Dr. A. B. Osborne, Hamilton, is also transferred to the reserve of officers. Major and temporary colonel G. H. Parke is gazetted lieutenant colonel, vice Dr. C. W. Wilson, resigned. Major A. N. Hayes, M.D., Sarnia, becomes a lieutenant colonel.

Toronto Board of Trade and Tuberculosis.—The Toronto board of trade has been investigating the question of tuberculosis as applied to immigrants and has come to the conclusion that the Dominion immigration inspectors are not doing their duty satisfactorily. Of the 243 patients treated in the Muskoka Free Hospital for Consumptives during the past official year 83 or one-third were of foreign birth; and it seems that a goodly proportion of these left their homes to emigrate to Canada afflicted with the disease and in some way managed to deceive the inspectors at Quebec. At the Toronto Free Hospital for Consumptives at Weston, 134 patients were cared for during the past official year and only 50 per cent. of this number were born in Canada. An analysis of the nationality of these patients shows that 35 per cent. came from Great Britain and Ireland, 2.9 per cent. from other British possessions, and 11.2 per cent. from foreign countries. The Toronto board of trade has reported this startling condition of affairs to the prime minister, Sir Wilfred Laurier, and has requested that steps be immediately taken to prevent the embarkation for Canada of any emigrants afflicted with pulmonary or any infectious or contagious diseases.

FOREIGN.

Donation to the Imperial Cancer Research Fund.—To celebrate their golden wedding, Mr. and Mrs. Bischoffsheim of England have given $200,000 to the Imperial Cancer Research Fund.

Higher Fees in and Around Berlin.—Thirty-four medical societies, with a membership of 2,657 members, embracing the Berlin region, have advanced the fees for private practice. This decision was officially voted at a general assembly of representatives of the various medical societies held in December.

Scarlet Fever Among French Troops.—An epidemic of scarlet fever is reported among the troops stationed at Nancy and Toul, and the army surgeon attending the sick has also contracted the disease at Nancy. No leave of absence was granted to the soldiers as usual at the holidays, owing to the prevalence of the disease.

New Professor of Physical Chemistry at Leyden.—Professor Kuenen of University College, Dundee, Scotland, has been appointed to the newly established chair of physical chemistry in the University of Leyden. He is a graduate, a gold medallist, and Ph.D. of Leyden, and worked with Professor Ramsay in University College, London.

Death of Spanish Woman of 126.—The *Siglo Medico* of Madrid published some time ago the portrait of a working woman living in Madrid who was born in 1781, according to official records, and who was still living in astonishingly good health. Her death has just been announced; she succumbed to pneumonia at the age of 126.

The Stoerk Endowment.—The widow of the Vienna laryngologist, Karl Stoerk, has bequeathed her property for an endowment in memory of her late husband, who died in 1899. The bequest comes into effect after the death of her grandchildren. The estate is valued at $34,000, and the income is to be devoted to aid needy medical students.

Bequest from Physician for Billroth Endowment.—Billroth's former assistant and friend, Dr. D. Barbieri, has bequeathed his entire estate, valued at $75,000, to found an endowment in the name of Theodor Billroth. The income is to be used as stipends for young surgeons at the second surgical clinic at Vienna, the scene of Billroth's and Barbieri's labors. The bequest does not become operative until a life-interest has expired.

Proposed Duty on Proprietary Medicines.—The house of deputies in France is now discussing a bill to impose a 20 per cent. duty on all proprietary medicines. The manufacturing chemists and pharmacists are protesting most vigorously, as a matter of course, and many physicians have joined the ranks of protesters, as the duty would affect many drugs, curative sera, etc., which are being constantly used by physicians.

Consolidation of Two Urologic Journals.—It is announced that the *Centralblatt f. d. Krankheiten der Harn- und Sexual-Organe* will henceforth be combined with the *Monatsberichte f. Urologie*, assuming the new title: *Zeitschrift für Urologie*, to be published by Overländer of Dresden, C. Posner, L. Casper and H. Lohnstein of Berlin, and Zuckerkandl and Frisch of Vienna. It will be the official organ of the German Association of Urologists, and will be issued monthly by O. Coblentz, Berlin, for 25 marks, or about $6.50 a year.

Postgraduate Work in Italy.—Milan is rejoicing over the completion of an institution for postgraduate instruction in obstetrics, gynecology, occupation affections, hygiene of factories, orthopedics and what is called "social medicine." Other branches of postgraduate work are to be taught in the already established clinics. Milan is said to be the industrial and commercial center of Italy and has long lamented the lack of a university. She now takes the lead in providing the first center for postgraduate instruction, patterned after the postgraduate schools in this country and in Germany. The expense has been met by private subscriptions, with some aid from the city and state.

Banquet Tendered Ingegnieros.—Last month a banquet was tendered José Ingegnieros, the professor of psychology and chief of the clinic for nervous and mental diseases at Buenos Ayres, on the occasion of his return from a two years' trip to Europe. Although still comparatively young, he is called by some "the American Charcot." Among his important works are several on "Simulation," both in criminals and in the ordinary struggle for existence; "Musical Language and Hysteric Disturbances;" "Industrial Legislation in the Argentine Republic," and other articles in the *Nuova Antologia, Arquivio di Psiquiatria, Semana Medica, Brazil Medico* and other French, Italian and Spanish journals.

Semaine Médicale Drops Its Index of Current Medical Literature.—For years the Paris *Semaine Médicale* has published a classified list of the titles of most of the articles appearing in some of the principal journals of the world, during the last few years issuing a quarterly index of this *Bulletin bibliographique international*, as it was called. With the opening of 1907 the *Semaine Médicale* omits this feature of its journal, devoting the space henceforth to more summaries of the important works published throughout the world. It states that readers were frequently unable to procure for themselves the articles indexed, or, when obtained, they were found comparatively unimportant, owing to the inevitable absence of selection in an index of the kind. The *Semaine Médicale* has always been distinguished for the careful way in which it was edited, the articles culled for review from the vast field of current literature showing rare judgment and thus presenting in concise form the cream of the literary output of the day, but one criticism is unavoidable, namely, that when some new medical achievement is written up editorially, sometimes no mention is made of the original source in which it was published, at home or abroad.

Appendicitis Collective Inquiry in Germany.—The Berlin Medical Society appointed a committee last summer to collect statistics in regard to appendicitis, and the committee has just issued an appeal to physicians for their coöperation. It states that appendicitis in most of the civilized countries during the last two decades has assumed the form of an actual epidemic (Volkskrankheit). In Germany it has not only increased in frequency, but also in severity, while comprehensive statistics of the morbidity and mortality have been lacking to date. The statistics published from the larger hospitals and clinics have not yet decided the important question as to which cases of inflammation of the cecum require operative treatment unconditionally, and the so-called early operation, and which cases can be safely left to expectant internal treatment. The physicians of Greater Berlin are therefore urged to collect data during 1907 which can be used for statistical comparison in regard to the frequency and the various forms of appendicitis, the course and the outcome of the affection under internal and operative treatment, and the like. A question blank is to be sent to each physician to fill out and return, and arrangements have been made with the authorities so that the question blanks will not require postage. In order to avoid duplication of data, the physician in whose hands the patient first arrives and who makes the diagnosis, is the only one to note the data in the case. As a means to avoid further confusion, the name in full of each patient is to be added to each case mentioned. The *Perityphlitiskommission* includes Albu, Aschoff, Kraus, Lenhoff, Neumann and four others.

Behring's Antituberculosis Immunization.—The organ in which von Behring published his communications a year ago was a Paris daily, and now it is a Berlin daily in which he presents the latest results of his researches. The *Ztschr. f. aerztl. Fortbildung* adds, in commenting on this fact, that he selected December 11, Koch's birthday, as the day on which to publish in a lay paper this latest communication, simultaneously with his presentation of it at Stuttgart at a meeting for the benefit of the Wurtemberg Society for the Care of the Sick in the Colonies. THE JOURNAL has already mentioned—pages 869 and 1111 of the last volume—the results obtained with his tulase lactine, which he thinks is destined to play a highly important part in the treatment of scrofula and in the preventive immunization of infants against tuberculosis, similar to his successful immunization of young calves. The immunization does not attain its maximum until from five to thirteen weeks after the course of injections is completed. The progress of immunization can be traced by quantitative determination of the protecting bodies in the blood serum in comparison to normal serum. These protecting bodies pass into the milk, and it thus becomes possible to immunize infants by first immunizing the mother by this means, or by immunizing the cow from which it obtains its milk supply, if artificially fed. He says that the immunity conferred lasts longer than by other technics, and that his favorable experience with tuberculous animals still in fair general condition justifies the hope that tuberculous patients under similar conditions may derive equal benefit from the tulase treatment.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Jan. 2, 1907.

Work of the Liverpool School of Tropical Medicine.

The equipment of the Liverpool School of Tropical Medicine, whose achievements have been so frequently chronicled in THE JOURNAL, continues to keep pace with its important work. Laboratories outside Liverpool, at Runcorn, were established some two years ago because the Johnston laboratories, being situated in the city, were not adapted for keeping a large number of animals, both great and small. The chief work has been the study of trypanosomiasis and relapsing fever. Research work proper, however, is only part of the function of these laboratories. From here the Johnston laboratories are supplied with living parasites, the trypanosomes of dourine, mal de Caderas, nagana, Gambian horse sickness and sleeping sickness being kept constantly going in animals. The ticks, *Ornithodorous moubara* and *Argas miniatus*, are bred. Stocks of the *Irodes reduvius* and *Rhipicephalus annualtus*, which transmit the piroplasms of "red water" in cattle, are also kept.

Method of Preventing Suicide.

General Booth, the founder of the Salvation Army, has inaugurated a scheme for the prevention of suicide. Persons whose

lives have been saved in spite of themselves, almost invariably express gratitude to their rescuers. All that is wanted in many cases is just sound common sense advice, which would-be suicides shrink from asking from their friends, and which their friends are often unfitted to give. The bureau is superintended by two Salvation Army officers of wide experience of life, to whom those who have come to the conclusion that their difficulties are insuperable and that life is not worth living, may apply for advice, either in person or by letter. Confidences will be rigidly kept and secrecy inviolably preserved. No inquiries into the antecedents or private circumstances of applicants will be made. Nothing will be committed to writing without the express permission of the applicants. No financial assistance can be promised. The need of such an experiment lies in the fact that suicides in the United Kingdom have increased by 200 per cent. in 50 years, and by 50 per cent. in 25 years.

Cheap Purification of Sewage; Prevention of Contamination of Streams and Oyster Beds.

Mr. W. P. Digby and Mr. H. Shenton, before the Society of Engineers, read a paper on the contamination of drinking water, fisheries and shell fish layings by sewage. The Royal Commission has foreshadowed legislation forbidding the discharge of crude sewage and even of an effluent chemically pure but bacteriologically impure. Methods of sewage treatment, however, have been devised that will eliminate the dangerous qualities at little cost. Organic matter discharged into a river would serve to feed pathogenic microbes. Various methods of sterilization were described, including the use of chemicals, many of which are too costly for practical purposes. The electrolytic production of sodium hydrochlorite was explained. This makes it possible to sterilize 61,600 gallons of effluent chemically pure for 10 pence ($0.20), exclusive of a small capital outlay. It is perfectly practicable to purify and to sterilize all the dry-weather daily flow of sewage entering the Thames, so as to render the water harmless.

VIENNA LETTER.

(*From Our Regular Correspondent.*)

VIENNA, Dec. 20, 1906.

Classes Conducted in English.

During the months of December, January and February a number of postgraduate classes are being conducted in English at the clinics of our General Hospital. The number of English-speaking students is continually increasing, and it has been found convenient for both the students and the teachers to conduct the lectures in English, so as to enable them to obtain the maximum benefit with the least difficulty. As regards the classes, they will deal with the following subjects: Otology, both practical and theoretical; ophthalmology (Klinik Schnabel); gynecology and obstetrics, in which the number of students is limited to six for each class; hematology (Klinik Neusser), and surgery of atypical conditions. Laryngology and bronchoscopy can be had as well, on application, but no special course has been announced. Another group of classes, not, however, in English, offering special advantages as to cost and time, will be held by the "Aertzekammer." The duration of the class is either six or twelve hours, mostly once or twice a week, in the evening hours (6-8), and it will cost twenty crowns (four dollars) for men with foreign diplomas, and six crowns for holders of continental degrees or diplomas. The subject of these classes will be such as are of special interest to active practitioners.

Vienna Practitioners Organize.

To-day the first meeting of a new organization of practitioners took place which may prove a very important and influential factor in regulating the material conditions of the profession, at least in Vienna. The new association intends to unite all doctors for the purpose of offering an unanimous body in all matters concerning the position of the practitioners toward clubs, contract practice, hospital abuse, bad debts, etc., and to arrange methods for calling the attention of the public authorities to the necessity of taking counsel with medical men in all matters which affect them. The leading men of the new organization belong to the medical staff of the university, several professors having taken up the matter, and promises of support have been received from all other medical clubs. As political dissensions are rather usual among the profession in Vienna, partly on account of racial and religious prejudices, partly due to the example set by parliament, the first clause of the by-laws of the organization provides that politics are absolutely banished from its aims. This has encouraged about 80 per cent. of the practitioners to become members of the organization, and it is justly expected that at last the tide has turned and a definite stand for the welfare of the profession will be made. Unanimous action is urgently desired, as again a scheme is in preparation by the "trade unions" to increase the burden on their doctors by reducing the pay or increasing the number of patients of each contract-man. The danger of the unions attaining their object is imminent, because the financial position of many young doctors prompts them to accept whatever opportunity of earning is held to them. The "passive resistance" of the country physicians is still being kept up, but the national authorities have not as yet yielded.

An Alleged Case of Malpractice.

The number of lawsuits for alleged malpractice is constantly increasing, and the public seems to take special interest in such suits. The insurance companies have taken the matter up, and have opened an account for the so-called "Haftpflicht," or liability of practitioners. It is to be regretted that the old-fashioned confidence in the doctor, which took all disadvantages arising from his actions as an inevitable but natural outcome, is fast dying out, and that the relationship between the doctor and patient is becoming merely that of an employer and employé. Thus a laborer, 21 years old, came recently to the clinic of Professor Frank, suffering from caries of the left foreleg. As conservative treatment was fruitless, an operation was advised and to which the patient submitted. A necrotic piece of the tibia had to be removed, and two days later a severe hemorrhage necessitated immediate amputation of the leg, because extensive thrombosis had interfered with the arterial supply and gangrene was threatened. The patient was dismissed with an artificial leg. His father, however, sued the professor and his assistant for $10,000 damages for crippling the lad. He contended, further, that infection must have taken place due to careless technic during the operation, otherwise such a simple operation ought not to have resulted in the loss of the limb. The court, after hearing medical experts, decided that there was no reason for granting any damages, as thrombosis could not have been prevented and that the surgeons had used the utmost care in dealing with the case.

Pharmacology

Adding Insult to Injury.

When the Council on Pharmacy and Chemistry, nearly two years ago, began its work of independent and scientific investigation of proprietary preparations, some of the questions asked were:

"What guarantee has the medical profession that the formulas of these proprietary medicines are not changed at the will of the manufacturers? How can the physician who confidingly prescribes them for his patients know that the preparation which he orders to-day is the same as that which was furnished him last year, or which may be given him next year, under the same name?"

At once a wail, as of injured innocence, went up from countless vendors of proprietary medicines, who replied with one voice:

"The honor and reputation of the proprietors and manufacturers is sufficient guarantee of the stability and permanence of these preparations."

So vehement were their protestations and so well simulated were their declarations of Pecksniffian virtue that many physicians were deceived thereby. Many medical journals (whose views were, perhaps, slightly biased by the consideration of fat advertising contracts), also were apparently convinced. But the fact was overlooked that guarantees based on honor are of value only in proportion to the amount and quality of honor possessed by the guarantors.

The enactment of the national Food and Drugs Act is bringing many things to light. Some of them are interesting, some would be amusing were they not so utterly despicable. Among other things, it has furnished a demonstration of the value of the "honorable assurances" of nostrum vendors.

The nostrum antikamnia has pointed many a moral in the campaign in the last two years. It was hardly to be hoped that it would deliberately furnish a demonstration of the utter lack of honesty on the part of a certain class of proprietary manufacturers. Yet, relying apparently on the

ignorance of the public and the long-continued lethargy of the medical profession, its promoters have, in the last few weeks, unwittingly convicted and stultified themselves. Having first advertised their mixture to the profession as a chemical compound and, later on, advertised and sold it directly to the public as a sovereign remedy for countless ills, it was shown by analyses made for the Council on Pharmacy and Chemistry that their preparation was a mixture containing acetanilid, caffein, citric acid and sodium bicarbonate. Now, when the pure food law went into effect, the proprietors of this mixture found themselves in a sad dilemma; if they labeled their mixture in accordance with the provisions of the law they would have to admit that it contained acetanilid and that the charges against them were true. Failing to comply with the law, they must go out of business. The latter alternative was not to be thought of. The profits gained by selling, with the aid of careless or ignorant physicians, a five or ten-cent mixture for $1 were too great to be surrendered without a struggle. Was there no way out? There was. The same brilliant intellect, perhaps, that first saw the commercial possibilities in the business, said: "Change the formula. Phenacetin is about as cheap as acetanilid; the patent has just expired and consequently we can get it at a low price. Let us substitute phenacetin for acetanilid."

No sooner said than done. But how about the "honor and reputation of the manufacturers?" Never mind that, so long as the profits are undiminished and the public, both lay and professional, is ignorant and credulous.

As a result the profession is treated to an edifying exhibition of virtue triumphant, a wolf so completely covered by the harmless coat of a sheep that he flatters himself that his wolfish nature is completely concealed. No longer are skulls and skeletons sent out in calendar form as grinning advance agents to be displayed in every doctor's office, but instead a beautiful domestic scene, showing a convalescent child nestling in the arms of its mother. The familiar "AK", however, as usual, is in the lower right-hand corner. And what a change in labels! No longer is antikamnia a chemical entity, but the label now openly but ingenuously declares that "Antikamnia tablets in this original package contain 350 grains acetphenetidin, U. S. P., per ounce. Guaranteed under the Food and Drugs Act, June 30, 1906. Serial No. 10." While below, as an entirely unnecesary display of conformity to the Pure Food Act, appears the statement:

"The Antikamnia tablets in this original ounce package contain no acetanilid, antifebrin, antipyrin, alcohol, morphin, opium, codein, heroin, cocain, alpha- or beta-eucain, arsenic, strychnin, chloroform, cannabis indica or chloral hydrate."

Truly, Satan is appearing as an angel of light. What a gratification it is to the long exploited profession to know that antikamnia contains no alcohol, no chloroform, no cannabis indica, no chloral hydrate. How unfortunate that this spontaneous display of confidence is not carried far enough to inform the profession of the ingredients, aside from phenacetin, contained in the mixture!

The label is an admission that the nostrum does not contain what it was never supposed to contain, with the exception of acetanilid, and is indirectly an attempt to conceal the real contents. The proprietors knew that the dear public, whose "pains, headaches, neuralgias, women's aches and ills, grippal neuroses, nervousness, insomnia, rheumatism, lightning pains of locomotor ataxia, sciatica, etc.," they are longing to assuage, will not know that acetphenetidin is the official designation for what is popularly known as phenacetin, and that this dangerous product is found in the new mixture in the proportion of approximately 4 grains to a 5-grain tablet. Evidently they also presume considerably on the ignorance of our profession, or why should they make the brazen statement that four grains of phenacetin is the "most reliable remedy" for the long list of diseases enumerated on their advertising calendar. On the outside of the envelope in which this interesting collection of misleading statements is mailed, appears the appropriate caution, "Please do not bend this package." Evidently the calendar is not so elastic as are the consciences of those who circulate it.

"Can a leopard change his spots?" We have the assurance of holy writ that it is a most difficult process. But evidently, as John P. Robinson said, "They didn't know everything down in Judee." That was before the days of nostrum vendors and advertising agents, who do not hesitate to sacrifice what honor they may have once possessed for the sake of continuing their humbuggery, and who even have the effrontery to attempt to make capital out of their deception by brazenly announcing that they were "the tenth firm to file their label with the pure food commissioners," at the very time that they are perpetrating this fraud on physicians.

When the formula for which such wonderful virtues was claimed was suddenly thrown overboard, was the medical profession, which by its short-sighted patronage had built up this business, notified in any way of the change? Search the new advertising matter of this nostrum from beginning to end and you will find not one word to show that "the Antikamnia tablets in this original ounce package" differ in the slightest particular from those sold to the profession and the public for years past. This being true (and the statements of the promoters themselves are our authority for it), what remains of the pratings of "honor" and the "guarantee of the manufacturers"? Has a physician no right to know when a change is made in the formula of a preparation which he has been prescribing for years?

What assurance has the profession that, at any moment, a cheaper or more dangerous drug may not be substituted for "acetphenetidin" if thereby the law can be evaded or the profits of the delectable business enhanced?

How can any conscientious physician prescribe, for those who confide their lives to his care, a preparation the stability of the formula of which must depend absolutely on its owner's whim?

How can a physician with the slightest sense of responsibility to his patients allow his office to be used as a free advertising bureau for a preparation manifestly founded and developed on deceit and misrepresentation?

How can any medical journal, except those avowedly and unblushingly seeking to aid the nostrum maker to exploit the profession, whose interests they claim to serve, continue to carry the deceptive and misleading advertisement of a twice exposed fraud?

How can any physician with a particle of self-respect or manhood continue to support, by subscription or contribution, any medical journal which, by accepting such advertising, allies itself with the army of deceit and chicanery?

Want Reform in Nostrum Business.

It is but too well known that a large portion of the pharmacist's business consists of the sale of "patent medicine," and that these nostrums are sold by him without attempting in any way to protect the public from fraud. And with much truth it has been argued that the numerically strongest association of druggists in the United States has for its chief aim the methods of increasing the sale of "patent medicines." It is therefore worthy of note that pharmacists fully realize that they can not serve the physician and the public on the one hand, and the "patent-medicine" concern on the other hand, at one and the same time; this is indicated by a resolution reported to the executive committee of the Illinois Pharmaceutical Association. The resolution reads in part:

> The honest and conscientious pharmacist who desires to do the square thing by his medical friends and his customers can not go out of the way to assist any manufacturer who makes dishonest claims for his products, as to their contents or medicinal value.
>
> The public has been thoroughly aroused in regard to the "patent-medicine" question, and looks to the pharmacist for information on it. For the pharmacist to cater to the patronage of physicians on one hand and on the other to assist in selling quack nostrums under flagrant misrepresentation, is undermining our very foundation for confidence of the public in our competency and integrity.
>
> We therefore beg to submit that an earnest appeal be drafted to the manufacturers of "patent medicines" so to revise their advertisements as to make it possible for honorable pharmacists to tolerate traffic in "patent medicines."

The trouble with the last proposition is that the druggists are asking too much; if the manufacturers of "patent medicines" revise their advertisements to make it possible for "honorable pharmacists to tolerate the traffic," the manufacturers must tell only the truth, in which case their sales would fall off to the vanishing point.

Agreement Between Physicians and Pharmacists.

The physicians and pharmacists of Monessen, Pa., have entered into an agreement by which the druggists agree to avoid window displays of proprietary medicines and the advertisement of the same, to discourage counter prescribing and to refer patrons to a physician, and the physicians agree, on the other hand, not to dispense tablets except in case of emergency and not to prescribe proprietary pharmaceuticals, but to indicate U. S. P. and N. F. preparations wherever possible. The plan is said (*N. A. R. D. Notes*, Nov. 15, 1906), to work well and to be spreading to other towns in Pennsylvania.

Correspondence

Cyclopedia of American Medical Biographies.

BALTIMORE, Jan. 8, 1907.

To the Editor:—The letter published in THE JOURNAL, Dec. 8, 1906, in regard to the Cyclopedia of Biographies brought responses from all parts of the country.

I wish to report marked progress in the enterprise, and to put before the profession the organization of the plan up to the present. I have three sets of collaborators engaged in different fields of activity. First, there are men who take charge of large sections of the country or a state; second, those who have charge of the specialties, and third, a system of volunteer associates, or those who engage to write one or two biographies. Those who have charge of the states will be glad to have the specialists written up by men who are particularly familiar with their work. At the same time they will also be glad to have certain individual lives written by some one who is either a descendant, or who is particularly well acquainted with the subject, having lived in the neighborhood.

Dr. Walter L. Burrage has taken the New England states, with the exception of Connecticut and Rhode Island. Dr. Charles Caverley is co-operating with Dr. Burrage in Vermont; Dr. Walter Steiner has assumed Connecticut and Rhode Island; Mr. Albert T. Huntington, the librarian of the Brooklyn Medical Library, will probably assume charge of New York state, in co-operation with some other physician; Dr. Francis R. Packard has assumed Pennsylvania; Dr. August Schachner, Kentucky; Dr. Leartus Connor, Michigan, and Dr. H. E. Handerton, Ohio. I hope that Dr. Dudley P. Allen will co-operate with Dr. Handerton in gathering data for the history of a state in which so many of his ancestors have lived and attained eminence. Dr. P. C. Coffey has Oregon and Washington; Dr. C. S. Sheldon, Wisconsin; Dr. George H. Kress, California; Dr. Albert Robin, Delaware; Dr. E. A. Hoefer, Dakota; Dr. N. A. Powell, Ontario.

I hope through this notice to secure further co-operation in a work which ought to enlist the sympathies of every section of the country, including Canada.

I particularly want individual biographies or notices of biographies sent to me, and wherever posible, I want the picture and the signature of the worthy. HOWARD A. KELLY.

1418 Eutaw Place.

Did Not Endorse Solidified Formaldehyd.

STATE UNIVERSITY OF IOWA, IOWA CITY, Jan. 18, 1907.

To the Editor:—My attention has recently been called to a circular issued by the George Leininger Chemical Company, which now goes by the name of the International Chemical Company, in which I am quoted as recommending the George Leininger solidified formaldehyd for fumigation, and in which the State University of Iowa, the Iowa State Board of Health and I personally am mentioned as endorsing the products of this firm. It is true that I have examined the formadehyd mentioned and have found that when used in sufficient quantity (more than is recommended by the firm) and using it under certain conditions (such as a sufficient amount of moisture, a proper temperature, etc.), that it will disinfect. I have never, however, given it an unqualified recommendation and, so far as I know, it has never been endorsed by the Iowa State Board of Health or the State University of Iowa as such. I thought it due the profession to make this public statement in view of the wide advertising that is being done by the firm mentioned. HENRY ALBERT.

National Department of Health.

FORT WAYNE, IND., Jan. 18, 1907.

To the Editor:—The subject of a medical department in the federal government is of great interest to the profession. One of the chief objections to it hitherto was that the scope of the proposed secretaryship was not wide or important enough to warrant the creation of a department, and a bureau did not meet the wishes of those who advocated this innovation. Dr. Barchfeld's bill goes a great way in overcoming these objections. The supervision of foodstuffs and the control of the entire medical services of the Army and Navy would make the proposed department really important. I would suggest another service to be included—the census bureau. The supervision of emigration and immigration with the vital statistics and the statistics of morbidity—in a word, of the demography of the nation, would be a natural addition to the department of health. The internal fisheries, as distinct from the pelagic, and the experimental hatcheries would also be appropriate adjuncts to the proposed scientific department. All these together would make its scope and importance fairly comparable with the other departments represented in the President's cabinet. WILLIAM P. WHERY, M.D.

Marriages

GEORGE GREEN, M.D., to Miss Lydia B. Williams, both of Norfolk, Va., January 9.

JOSEPH HALL, M.D., to Miss Carrie Nelson, both of Bay Minette, Ala., January 2.

J. BYNUM STANLEY, M.D., to Miss Lillian Helen Lang, both of Memphis, Tenn., December 5.

GEORGE C. KEIFER, M.D., Philadelphia, to Miss Juanita M. King of Pottsville, Pa., January 9.

WALTER V. SPENCER, M.D., to Miss Villa May Brown, both of Portland, Ore., January 1.

MARTIN W. FITZPATRICK, M.D., to Miss Julia Murphy, both of Decatur, Ill., at Springfield, Ill., January 7.

WALTER DE LA M. HILL, M.D., to Miss Julia Tompkinson, both of Everett, Pa., at Cumberland, Pa., December 31.

FRANCIS M. MCNAIR, M.D., Sugar Grove, Ill., to Miss Evelyn McGibbon of Galesburg, Ill., at Valparaiso, Ind., January 12.

Deaths

Julius Caesar Le Hardy, M.D. Jefferson Medical College, Philadelphia, 1856; at one time professor of chemistry in Oglethorpe Medical College, Savannah; a member of the Georgia Medical Society since 1858, and its president in 1873; a member of the Medical Association of Georgia since 1868 and its president in 1851; medical director of the Citizens' Sanitary Association of Savannah from its organization in 1882; at one time health officer of Savannah and a hygienist and sanitarian of great ability; a Confederate veteran and one of the most widely known physicians in South Carolina, died at his home in Savannah, January 7, from nephritis, after an illness of several months, aged 75.

Daniel S. Adams, M.D. College of Physicians and Surgeons in the city of New York, 1872; a member of the American Medical Association; treasurer of the New Hampshire Medical Society from 1881 to 1891, and president of the board of censors of the society in 1886; a delegate to the International Medical Congress in Washington, 1887; a member of the New England Alumni Association of the New York Hospitals; a member of the staff of Elliott Hospital, Manchester, N. H., since its foundation and one of the most prominent practitioners of that city, died at his home, January 12, from malignant disease of the intestines and liver, after a long illness, aged 60.

William L. Hunter, M.D. Jefferson Medical College, Philadelphia, 1868; a member of the American Medical Association; a veteran of the Civil War; postmaster of Turtle Creek, Pa., for six consecutive terms, and a member and president of the council at that place; one of the best known practitioners of the Turtle Creek Valley, died suddenly at his home in Edgewood, Pa., January 7, from cerebral hemorrhage, aged 62.

William H. Lauman, M.D. Bellevue Hospital Medical College, New York City, 1867; for several terms coroner of Cumberland County, Pa.; at one time school director and president of the local board of health, died at his home in Mount Holly Springs, January 11, from cerebral hemorrhage, after an illness of a year and a half, aged 68.

George C. Borst, M.D. Bellevue Hospital Medical College, New York City, 1876; a member of the American Medical Association and Cumberland County (Pa.) Medical Society, and a prominent physician of the county, died at his home in Newville, January 8, from gastritis, after a brief illness aged 53.

Gustavus A. Bachman, M.D. Jefferson Medical College, Philadelphia, 1873; a member of the American Medical Association; for many years a druggist of Kensington, and a member of the school board of the nineteenth ward of Philadelphia, died at his home in that city, January 8, from heart disease, aged 64.

William M. Weaver, M.D. Yale University, Medical Department, New Haven, Conn., 1897, of Hartford, Conn.; an inmate of the New York State Hospital for the Insane, Islip, L. I., who disappeared from that institution, December 16, was found hanging from a tree near Brentwood, L. I., January 4, aged 36.

William K. Knowles, M.D. Hahnemann Medical College, Philadelphia, 1871; manager of the *New England Medical Gazette*, and at one time chairman of the Board of Health of Everett, Mass., died at the Massachusetts Homeopathic Hospital, Boston, January 7, after a long illness, aged 56.

Michael Hawes, M.D. Starling Medical College, Columbus, Ohio, 1856; a surgeon during the Civil War; the oldest practitioner in Guernsey County, Ohio, where he had practiced for more than half a century, died at his home in Claysville, January 7, from senile debility, aged 79.

Benjamin Hubbard, M.D. Berkshire Medical College, Pittsfield, Mass., 1843; one of the oldest members of the Old Colony Medical Association; a member of the school committee of Plymouth, Mass., died at his home, January 12, after an illness of four weeks, aged 89.

Frederick W. Bridgham, M.D. Medical School of Maine, at Bowdoin College, Brunswick, 1866; a member of the Maine Medical Association and Hancock County Medical Society, died suddenly at his home in Sullivan, January 6, from heart disease, aged 71.

Abraham S. Baldwin, M.D. University of Maryland School of Medicine, Baltimore, 1847, one of the oldest residents of Long Green Valley, Md., died at his home at Baldwin Station, January 9, from cerebral hemorrhage, after an illness of two years, aged 81.

A. Julian Cabell, M.D. University of Virginia, Medical Department, Charlottesville, 1887; a member of the state and county medical societies, died at his home in Norwood, Va., January 7, from pneumonia, after an illness of one week, aged 48.

James C. Dirickson, M.D. Jefferson Medical College, Philadelphia, 1853; at one time consul to the Navigator Islands and surgeon with the Walker expedition to Nicaragua, died at his home in Berlin, Md., from pneumonia, January 4, aged 73.

John W. Johnson, M.D. College of Physicians and Surgeons, Baltimore, 1893; a member of the state and county medical societies, died at his home in Torrington, Conn., January 12, from nephritis, after an illness of several months, aged 35.

Patrick J. Ragan, M.D. Jefferson Medical College, Philadelphia, 1876; formerly a practitioner of Virginia City, Mont., and later a resident of Haywoods, Cal., died at his home in that place, January 2, from hemorrhage, aged 65.

Richard Mervin Cogan, M.D. Jefferson Medical College, Philadelphia, 1906; substitute physician at the Rhode Island Hospital, Providence, died at that institution from scarlet fever, January 4, after an illness of four days, aged 27.

John W. Ralston (Years of Practice, Illinois) 1888; for many years a practitioner of Indianola, Ill., and school director of that place, died at his home in Danville, Ill., January 6, after an illness of two weeks, aged 76.

Otto F. Jentz, M.D. New York Medical College, New York City, 1864; of Hasbrouck Heights, N. J.; a member of the board of education of that place, died at his home, December 20, from intestinal obstruction, aged 62.

George W. Boland, M.D. University of Maryland School of Medicine, Baltimore, 1856, died at his home in Barnesville, Md., January 8, from senile debility, after an illness of one year, aged 82.

George W. Fuller, M.D. Cooper Medical College, San Francisco, 1887; a member of the state and county medical societies, died at his home in San Francisco, January 1, after a long illness.

Simon I. Groot, M.D. Berkshire Medical College, Pittsfield, Mass., 1846; of Washington, D. C., died at the Homeopathic Hospital in that city, from pneumonia, January 8, aged 86.

Gilbert L. Rose, M.D. Cincinnati College of Medicine and Surgery, 1875; died at his home in Decatur, Mich., January 5, after an illness of five days, from pneumonia, aged 53.

Alfons Muller, M.D. University of Halle, Germany, 1886; New York University Medical College, 1890, died at his home in New York City, from pneumonia, January 9, aged 45.

Joseph J. Cummings, M.D. Jefferson Medical College, Philadelphia, 1874, died at his home in Philadelphia, January 7, from pneumonia, after a short illness, aged 50.

William M. Crawford, M.D. Medical College of the State of South Carolina, Charleston, 1885; died at his home in Lancaster, S. C., January 8, after a long illness.

James Moore Still, M.D. Rush Medical College, Chicago, 1864, died at the home of his daughter in Maryville, Mo., recently, aged 80, and was buried January 10.

G. W. Waters, M.D. Hospital College of Medicine, Louisville, 1876, of Lane La., died at the home of his brother in Belcher, La., January 2, aged 59.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Jan. 19, 1907:

Harvey, Philip F., asst.-surgeon-general, leave of absence extended one month.

Woodson, R. S., surgeon, relieved from duty at Fort McDowell, Cal., and will proceed to San Francisco, Cal., and sail from that place on or about Feb. 5, 1907, for the Philippine Islands, and on arrival at Manila will report in person to the commanding general, Philippines Division, for assignment to duty.

Farr, Charles W., asst.-surgeon, arrived at the Army General Hospital, Presidio, San Francisco, Cal., for treatment, from Manila, P. I.

Davidson, Wilson T., asst.-surgeon, relieved from duty at Presidio of Monterey, Cal., and ordered to Fort D. A. Russell, Wyo., for duty.

Banister, John M., deputy surgeon-general, ordered to proceed from Fort Riley, Kans., to Omaha, Nebr., and report in person to the commanding general, Department of the Missouri, for temporary duty as acting chief surgeon of that department.

Ashburn, James K., contract surgeon, returned to duty at Fort Lincoln, N. D., from leave of absence.

Rhoades, Rex H., dental surgeon, left Fort Sheridan, Ill., and arrived at Columbus Barracks, Ohio, for duty.

Marshall, John S., examining and supervising dental surgeon, returned to duty at Army General Hospital, Presidio of San Francisco, Cal., from leave of absence.

Hammond, William G., dental surgeon, returned to duty at Fort Logan, Colo., from leave of absence.

Millikin, John D., dental surgeon, ordered from Fort Leavenworth, Kans., to Fort Riley, Kans., for duty for one month.

Stone, Frank P., dental surgeon, ordered from Fort Clark, Texas, to Fort Bliss, Texas, for temporary duty.

Whitney, Walter, contract surgeon, left Fort Terry, N. Y., on leave of absence for one month.

Gregory, Verdo B., contract surgeon, relieved from further duty in the Philippines Division, and ordered to Fort Adams, R. I., for duty.

Dade, Waller H., contract surgeon, returned to Fort D. A. Russell, Wyo., from leave of absence.

Pinquard, Joseph, contract surgeon, granted leave of absence for one month, fifteen days.

Adair, George F., contract surgeon, relieved from further duty at Fort Wadsworth, N. Y., and ordered to duty at Fort Wood, N. Y.

Tyler, George T., contract surgeon, relieved from duty at Fort Monroe, Va., and ordered to duty at Fort Wadsworth, N. Y.

Long, Charles J., dental surgeon, left Fort Snelling, Minn., and arrived at Fort Assinniboine, Mont., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Jan. 19, 1907:

Block, W. H., acting asst.-surgeon, resignation accepted, to take effect from Jan. 13, 1907.

DeLancy, C. H., P. A. surgeon, detached from the *Hancock* and granted sick leave for three months.

Bagg, C. P., surgeon, detached from the Naval Station, Guam, L. I., and ordered home to wait orders.

Hart, G. G., acting asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to the *Albatross*.

McCullough, F. E., surgeon, detached from the *Albatross* and or-

dered to the Naval Station, Guam, L. I., sailing from San Francisco, February 5.

Mink, O. J., asst.-surgeon, ordered to the Naval Medical School, Washington, D. C.

Hibbett, C. T., medical inspector, detached from the *Franklin* and ordered to the Naval Rendezvous, St. Louis.

Riggs, C. E. surgeon, detached from the *Pensacola* and ordered to duty with Marine Legation Guard, Pekin, China, sailing from San Francisco, February 21.

Decker, C. P., surgeon, ordered to duty on board the *Franklin*.

Taylor, J. S., P. A. surgeon, detached from duty with Legation Guard, Pekin, China, and ordered home to wait orders.

Abekin, F. G., P. A. surgeon, detached from the Naval Rendezvous, St. Louis, and ordered to the Naval Training Station, San Francisco.

Straeton, R. J., asst.-surgeon, Duhigg, J. C., appointed assistant-surgeons, with rank of lieutenant (junior grade) from Dec. 20, 1906.

ORDERS ISSUED BY COMMANDER-IN-CHIEF OF ASIATIC FLEET, JANUARY 17.

Thompson, J. C., surgeon, detached from the *Cincinnati* and ordered to the Naval Station, Olongapo, P. I.

Peck, A. E., P. A. surgeon, detached from the *Concord* and ordered to the Naval Station, Olongapo, P. I.

Sellers, F. E., asst.-surgeon, detached from the *Mohican* and ordered to the *Cincinnati*.

Stoops, R. E., asst.-surgeon, detached from the Naval Station, Olongapo, P. I., and ordered to the *Concord*.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Jan. 18, 1907:

SMALLPOX—UNITED STATES.

Arkansas: Fort Smith, Dec. 1-15, 2 cases.
Georgia: Augusta, Jan. 1-8, 11 cases.
Illinois: Galesburg, Jan. 5-12, 13 cases; Sandwich, Dec. 1, 1 case; Viola, Oct. 1-Jan. 8, 5 cases.
Indiana: Indianapolis, Dec. 30-Jan. 6, 2 cases; South Bend, Jan. 5-12, 3 cases.
Louisiana: New Orleans, Jan. 6-12, 6 cases.
Michigan: Detroit, Jan. 5-12, 1 case.
Missouri: St. Joseph, Dec. 29-Jan. 5, 7 cases, 1 death.
New York: New York, Jan. 5-12, 3 cases.
Wisconsin: La Crosse, Jan. 5-12, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, Dec. 1-8, 2 cases.
Brazil: Pernambuco, Nov. 15-30, 26 deaths.
Canada: Nova Scotia, Colchester County, Jan. 7, present; Cumberland County, Jan. 7, present.
China: Chefoo, Nov. 13, 1 death (from S. S. *Raleigh*); Shanghai, Nov. 24-Dec. 2, 1 case.
Cuba: Habana, Jan. 5, 1 case (from *Kronprinzessin Cecilia*); Jan. 7, 1 case (from S. S. *Puerto Rico*).
France: Paris, Dec. 15-29, 9 cases, 1 death.
India: Bombay, Dec. 11-18, 1 death; Calcutta, Dec. 1-8, 4 deaths; Madras, Dec. 8-14, 1 death.
Italy: General, Dec. 13-20, 3 cases.
Netherlands: The Rotterdam, Dec. 30-Jan. 5, 1 case, 1 death (imported).
Russia: Moscow, Dec. 8-15, 1 case; Odessa, Dec. 15-29, 11 cases, 3 deaths; St. Petersburg, Dec. 1-22, 12 cases, 5 deaths.
Spain: San Feliu du Guixols, Dec. 22-29, 1 death.
Syria: Beirut, Dec. 15-29, present.

YELLOW FEVER.

Salvador: Republic, Jan. 14, epidemic.

CHOLERA—INSULAR.

Philippine Islands: Nov. 18-24, Manila, 2 cases, 1 death; Provinces, 59 cases, 45 deaths.

CHOLERA—FOREIGN.

India: Bombay, Dec. 11-18, 4 deaths; Calcutta, Dec. 1-8, 91 deaths; Rangoon, Dec. 1-8, 20 deaths.

PLAGUE.

Brazil: Bahia, Nov. 25-Dec. 8, 6 cases, 5 deaths.
China: Hongkong, Nov. 25-Dec. 1, 1 cases, 1 death.
Egypt: Alexandria, Dec. 22-26, 1 case, 2 deaths; Kench, Dec. 22-27, 6 cases, 8 deaths; Menoufieh, Dec. 21-27, 1 case, 2 deaths.
India: General, Nov. 25-Dec. 8, 16,041 cases, 12,090 deaths; Bombay, Dec. 11-18, 13 deaths; Calcutta, Dec. 1-8, 19 deaths; Rangoon, Dec. 1-8, 13 deaths.
Peru: Chicama Valley, Dec. 11, 14 cases.

Public Health and Marine-Hospital Service.

List of chaiges of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Jan. 16, 1907:

Stoner, G. W., surgeon, directed to proceed to Boston as chairman of board of examiners; on completion of duty to rejoin station.

Guiteras, G. M., surgeon, leave of absence granted for seven days from January 8, revoked.

Brown, B. W., P. A. surgeon, directed to proceed to Evansville, Ind., for special temporary duty, on completion of which to rejoin station at Louisville, Ky.

Lavinder, C. H., P. A. surgeon, extension of leave of absence for seven days from January 8, amended so as to grant five days only.

McMullen, John, P. A. surgeon, directed to proceed to Boston as recorder of board of examiners; on completion of duty to rejoin station.

Robinson, D. E., P. A. surgeon, directed to proceed to Baltimore, reporting to medical officer in command for duty and assignment to quarters.

Goldberger, Joseph, P. A. surgeon, bureau letter of November 13 amended so as to grant 16 days' leave of absence instead of 21 en route from Mexico, Mex.

Gwyn, M. K., P. A. surgeon, granted leave of absence for one month from Dec. 17, 1906.

Stimson, A. M., asst.-surgeon, granted leave of absence for seven days from Jan. 10, 1907, under Paragraph 191 of the Service Regulations.

Stimson, A. M., asst.-surgeon, granted extension of leave of absence for seven days.

Rucker, W. C., asst.-surgeon, granted two days' leave of absence from January 15.

Rogers, Edward, pharmacist, relieved from temporary duty in Washington, D. C., and directed to rejoin station, Stapleton, N. Y.

McBride, Charles R., pharmacist, granted leave of absence for six days from Dec. 1, 1906, under Paragraph 201 of the Regulations.

BOARDS CONVENED.

A board of medical officers was convened to meet in Baltimore on January 12 for the physical examination of cadets in the Revenue Cutter Service. Detail for the board: Surgeon L. L. Williams, chairman; Asst.-Surgeon Friench Simpson, recorder.

A board of medical officers was convened to meet in Boston, January 14, for the physical examination of an applicant for the position of constructor in the Revenue Cutter Service. Detail for the board: Surgeon R. M. Woodward, chairman; Acting Asst.-Surgeon F. H. Cleaves, recorder.

A board of medical officers was convened to meet in Boston, January 14, for the examination of an alien immigrant. Detail for the board: Surgeon G. W. Stoner, chairman; Surgeon R. M. Woodward, Passed Asst.-Surgeon John McMullen, recorder.

REINSTATEMENT.

Dr. John W. Tappan reinstated as an acting assistant surgeon Jan. 12, 1907.

CASUALTY.

Pharmacist John Achenbach died Jan. 12, 1907, at Port Townsend, Wash.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

STATUS OF SCOPOLAMIN-MORPHIN ANESTHESIA.

CHICAGO, JAN. 15, 1907.

To the Editor:—I am surprised and astounded at the communications on page 159 of THE JOURNAL, Jan. 12, 1907. Dr. Ray asked a very proper question. Like many another he failed to notice that our advertisements as published referred not to "scopolamin-morphin," to which these many fatalities are properly accredited, but to "hyoscin-morphin-and-cactin compound," our special product now successfully used in over one thousand cases already recorded with us, and "without one untoward result as yet reported." He also quoted Wood's therapeutics where many gruesome statistics are given.

In an article published by me in the *International Journal of Surgery*, February, 1906, I called attention to the dangers of scopolamin-morphin anesthesia and have since arrayed my influence against that expedient. In that same article I suggested an explanation of these dangers and suggested that pure hyoscin be used instead, and gave the formula for trial which I have since so widely published.

My suggestions in this paper were taken up by a number of surgeons, some of whom have reported publicly and others to me privately, all reports thus far being favorable to the utmost degree.

I am perfectly well aware that scopolamin is claimed by some to be identical with hyoscin, but the fact remains that the same therapeutic results are not obtained from the one that are obtained from the other. In this connection Shoemaker's "Therapeutics," sixth and latest edition, page 545, at the end of a learned and elaborate study of many authorities says: "From the above we learn that the name scopolamin, which has for some time now been used in chemical literature and which has even been adopted by and introduced into the German pharmacopeia should be therefrom erased, since it is merely a mixture of hyoscin hydrobromate and atroscin hydrobromate and not a chemical compound."

But this is not the point; I will leave that for the theorist. The fact remains, as stated, that the consensus of opinion of all observers with whom I am in touch is to the effect that their actions are not identical and it is to hyoscin-morphin-and-cactin compound, the product of the Abbott Alkaloidal Company, that I refer. It is this on which my statements are based, and it is from the use of this tablet that, so far as I know (and I have the benefit of close touch with many able observers the country over), that "no untoward result has as yet been reported."

Dr. Wood has evidently passed over these points very carelessly, he has unquestionably read but few, if any, of the papers published and for some reason or another is prompted by an animosity, personal or induced, that leads him to characterize the statements of an earnest, honest man as "separated from falsehood only by the width of the advertiser's license."

Dr. Wood apparently would have it deduced from his answer that morphin will do all in surgical anesthesia that hyoscin-morphin-and-cactin compound will do. I will leave this point for those familiar with both to answer.

I have nothing whatever to say or to hint as to the products of other houses. The manufacturers are fully capable of speaking for themselves. I ask no support from Wood or any one else that they can not conscientiously give; but I do object to being treated unfairly, to being held responsible for deductions from

statements I have never made, and to have slated against me statistics based on the use of a product that I have always condemned. Dr. Wood can quote any number of so-called "authorities" as well as present his own work in support of claims of his own making, as he can in refutation of positions of his own assumption, but if he has any evidence refuting the statements I have made and the position I do hold, I trust he will publish it. Not one of the fatal cases collected by him occurred from the use of the Abbott tablet, even though I can scarcely be expected to vouch for the skill and care of every physician who uses these sharp-edged tools, any more than for the quality of the alkaloids and the skill in their pharmaceutic manipulation shown by other manufacturing houses.

As Dr. Wood's conclusions, so far as I can determine, are based entirely on the statistics of foreign observers, how can he, in all fairness, assume to measure thereby American results from the use of quite another thing? W. C. ABBOTT.

ANSWER.—The attitude of Dr. Abbott in his letter concerning the relation of hyoscin and scopolamin recalls very forcibly the position that was taken by many physicians some years ago concerning the physiologic action of thein and caffein. There was so much evidence, apparently authentic, to support the view that there was a marked difference between the therapeutic action of thein and caffein, that an exhaustive chemical and pharmacologic investigation was undertaken in one of the best-equipped university laboratories of the United States to determine once and for all the exact relation of these two supposedly different alkaloids. The chemical study demonstrated their chemical identity, and before the pharmacologic examination had fairly begun it was learned that the caffein used by the clinicians who reported a marked difference in its action from that of thein, had been actually manufactured from tea leaves, and was, therefore, nothing more than thein itself. Thus, this much-debated question was settled at one stroke. Among modern scientific men the question of the identity of hyoscin and scopolamin is not in dispute. It is only those who fail to keep pace with chemical and pharmacologic progress, and others, who for pecuniary reasons do not wish to keep pace, persist in maintaining that hyoscin and scopolamin are different bodies. It is really unfortunate that the confusion arising from the use of two names for a single valuable article must be perpetuated by selfish interests which profit to the extent that they succeed in befogging the physician. We will not quarrel over the nomenclature of the alkaloid under discussion, though there are good reasons why the name hyoscin might be abandoned. No less than three different bodies have at different times received the name "hyoscin." It was first applied to a decomposition product of hyoscyamin which is now universally recognized as tropin. Ladenburg later transferred the name to an amorphous alkaloid isomeric with atropin, which he claimed to have separated from hyoscyamus, but which was never found again, even by the largest alkaloid manufacturers of the world. Then Hesse used the same name to designate an alkaloid which he acknowledged, and which Schmidt amply demonstrated, to be identical with scopolamin. This identity was demonstrated not only chemically, but optically and pharmacologically by most careful methods. It is now, therefore, merely a matter of personal opinion or habit whether the name hyoscin or scopolamin shall receive preference. When Dr. Abbott condemns "scopolamin-morphin anesthesia" as being dangerous he condemns "hyoscin-morphin anesthesia" as well. From Dr. Abbott's letter we are expected to believe that all scopolamin on the market is a mixed product of atroscin and hyoscin and further that "the products of other houses" are to be looked on with suspicion. For the sake of argument let us assume that commercial scopolamin is a mixture of atroscin (racemic scopolamin) and hyoscin (levo-scopolamin) and then note the results of the classical work of Cushny on this very subject, which was published in the *Journal of Physiology*, vol. xxxii, July 13, 1905. He says "Lævo-hyoscin (scopolamin) and racemic hyoscin (atroscin) have the same effect on the central nervous system in man and mammals. . . ." No one has disputed the accuracy of these results which are practically quantitative. Since the cause of death by hyoscin- (scopolamin) morphin anesthesia is due to failure of respiration, a mixture of hyoscin and atroscin would be just as dangerous, but no more so than if either one were administered alone. In other words, as far as the dangerous effect is concerned, commercial scopolamin would have the same action as pure scopolamin (hyoscin). But as a matter of fact this assumption that commercial scopolamin is always a mixture of atroscin and hyoscin is absolutely unwarranted. When it is considered that the Abbott Alkaloidal Co. does not manufacture the alkaloid, but purchases it from sources which must be open to other pharmaceutical houses, the insinuation that the products of other houses may be unreliable and the inference that the only pure hyoscin (scopolamin) to be found in the market is in the form of "hyoscin-morphin cactin" tablets is amusing, to say the least, and will not be likely to deceive. In this connection it seems very remarkable that Shoemaker's "Therapeutics," which the author of the letter quotes to substantiate his position, passes by without even mentioning the beautiful and epoch-making researches of E. Schmidt and his pupils, who have done much to clear up the chemical and optical properties of this interesting alkaloid. "The elaborate and learned study of many authorities," referred to by Dr. Abbott, consists of the work of Ladenburg, which is only of historical interest, since it is inaccurate and no longer recognized, and that of Hesse, who at first championed the views of Ladenburg but was later compelled to acknowledge the accuracy of Schmidt's splendid researches. There is still one factor to be considered in this discussion and that is the use of cactin, whatever that may be. The only object of using this substance in this combination can be to counteract the dangerous respiratory depression of the hyoscin-morphin. Cactus has never been vaunted as a respiratory stimulant, but rather as a cardiac stimulant, equal to digitalis. Cactus is, however, a very uncertain drug, enormous doses of the very best preparations having been administered without producing the least effect. In some cases a slight rise in blood pressure has been noted, but in no case has the effect been comparable to digitalis. But assuming that cactus or cactin is all that its most enthusiastic supporters claim for it, the respiratory depression still remains, and, therefore, the element of danger is not eliminated. Since no convincing evidence has been offered that the use of the name "hyoscin" instead of the word "scopolamin" makes "hyoscin- (scopolamin) morphin" safe, no amount of juggling can conceal the fact that "hyoscin-morphin anesthesia" is fraught with great danger.

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The following letter from Dr. Robinson is answered by what has been said above. It contains practically the same arguments as does the letter from Dr. Abbott, but is published so that it may not be said that we do not give both sides. It should be remembered that Dr. Robinson is intimately connected with the Abbott Alkaloidal Co., at least as one of the editors of their journal.

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NEW YORK, JAN. 17, 1907.

To the Editor:—I read Dr. Wood's remarks in THE JOURNAL A. M. A., January 12, p. 159, with the greatest astonishment. There are but two points which I wish to take up, and I trust that in the interests of fair play you will give space to my remarks. Dr. Wood speaks of scopolamin and hyoscin as if they were one and the same substance; as if the discussion on the point of the identity or non-identity of the two substances were already completely at an end; as if the verdict of all pharmacologists were unanimous and the case were settled by a court from which there is no appeal. This is, I regret to say, very far from being the case. At present there are still pharmacologists who consider the two substances far from being identical. Hesse is one of those pharmacologists, and Professor Shoemaker has the following to say:

"It may be of importance just in this connection to note, as pointed out by Hesse, that commercial scopolamin hydrobromid contains an admixture of a small proportion of another powerful mydriatic alkaloid known as "atroscin," which is isomeric with hyoscin or scopolamin. Atroscin, apparently, bears a similar relation to the latter as regards mutual convertibility that hyoscyamin does to atropin. Some pharmaceutical authorities indeed allege that scopolamin hydrobromid *should be erased* from the German and United States Pharmacopeias, on the ground that it is merely a mixture of hyoscin hydrobromid and atroscin hydrobromid, and not itself a definite chemical compound. I call attention to this interesting point merely to note the fact that commercial scopolamin hydrobromid may differ in its physiologic action, owing to the variable quantity of atroscin present; this may also offer an explanation of any difference that may be observed between the action of scopolamin hydrobromid and hyoscin hydrobromid."—*New York Medical Journal*, Oct. 7, 1905.

This is a very strong statement, and it goes to show that there is at least still room for honest differences of opinion as to the identity of the two alkaloids. True, the chemical formula of hyoscin and scopolamin is the same, but what of it? So is the chemical formula of cocain and hyoscin, namely, $C_{17}H_{21}NO_4$, and of course nobody will assert that the two alkaloids are identical. The merest tyro in organic chemistry knows that two products may have the same chemical formula and be widely different in many other respects, particularly in their therapeutic effects. That the chemical behavior of the two alkaloids is the same also shows nothing, for a minute trace of atroscin in the scopolamin will not interfere with the reaction.

Another point is that Dr. Wood seems to be inclined to ascribe the anesthetic effect of the combination chiefly to the morphin. He says "Hyoscin has practically no power as an analgesic." Nobody ever claimed that it did. It certainly is not an analgesic, but it is a wonderful general narcotic. And it is for that purpose that it is given. He says further: "The addition of hyoscin to the morphin, therefore, can not greatly increase the insensibility to pain." If it can not, how is it that we are enabled to amputate limbs under its influence? We certainly could not do it under the influence of morphin alone. If we should try, such a large amount of morphin would be necessary as to be a positive danger to life. Again, thousands of cases of childbirth have been conducted by the aid of scopolamin-morphin (in the Frauen-Klinik at Freiburg, director Professor Krönig; in the Charité at Berlin, director, Professor Bumm, etc.), and it is certainly not the morphin that produced the

insensibility, but chiefly the hyoscin, for we know that morphin has but a slight effect in diminishing the agonies of labor.

In brief, I would say that it is very far from being a fact that the identity of hyoscin and scopolamin is universally accepted, and that Dr. Wood utterly misunderstands or underestimates the action of hyoscin as an anesthetic. I might add that the addition of a cardiac tonic to pure hyoscin and morphin can not fail to render the combination more safe and less liable to give rise to untoward effects. That the combination is absolutely safe, I am inclined to doubt. I do not believe that we will ever discover an absolutely safe hypnotic or an absolutely safe anesthetic. The induction of sleep or anesthesia is too complicated a phenomenon, and affects the vital processes too deeply ever to be absolutely safe. We can only speak of anesthetics as being relatively safe, or least dangerous.

WILLIAM J. ROBINSON, M.D.

THE LENHARTZ TREATMENT OF GASTRIC ULCER.

DAYTONA, FLA., Jan. 17, 1907.

To the Editor:—What is the Lenhartz diet for gastric ulcer and where can I find literature concerning it? I saw it mentioned in an article in THE JOURNAL of January 12, and good results were reported from its use. E. C. ATWOOD, M.D.

ANSWER.—The Lenhartz treatment consists of a somewhat abundant diet, chiefly of proteids, given on the principle that the excess of acid is thereby neutralized and the healing of the ulcer facilitated. The patient is put to bed and absolute rest enjoined, so that the first two weeks following hematemesis the feces and urine are passed in a bedpan. Mental quietude is also enjoined, especially freedom from any form of excitement. Confinement to bed is continued for at least four weeks. An ice bag is laid over the region of the stomach to promote the contraction of that organ, lessen the exposed surface of the ulcer and relieve pain. On the first day, even after hematemesis, the patient receives in teaspoonful doses about half a pint of iced milk and one, two or three fresh beaten eggs during the first twenty-four hours. The eggs are beaten up entire with a little sugar and the cup containing them placed in a dish filled with ice, so that they remain cold. In addition two or three times a day or oftener, bismuth subnitrate in, at most, 30-grain doses, is given, suspended in water, and these doses are repeated, as needed, for the first ten days, two or three times a day. The amount of milk is increased daily by about 100 c.c. (3½ ounces) and daily one egg is added until at the end of the first week about 800 c.c. (26 ounces) of milk and six to eight eggs are taken daily. After six days scraped beef can be given in quantities increased from the beginning dose of 31 gm. (one ounce) to 70 gm. (2 1/3 ounces) the second day, and so on, the beef being stirred into the egg. Gruel, softened zwieback, etc., may be added to the diet after two weeks, and at the end of four weeks an abundant mixed diet, avoiding coarse vegetables and other irritating substances, can be given. The bowels are kept open by enemata.

The method is described by M. Wagner (*Muench. med. Wochschr.*, Jan. 5, 1904) and also by J. V. Haberman (*Medical Record* of June 16, 1906). This method was tested by E. Wirsing, (*Archiv. f. Verdaungskrankheiten*, xi, 3), in comparison with the method of Leube, and he reaches the conclusion that it is better than the older method for patients who have had recent hemorrhages or who are much debilitated, but that the method of Leube should be given the preference in ordinary cases. His article was reviewed in THE JOURNAL, 1905, xlv, page 1122.

PUBIOTOMY WITH THE NEEDLE.

WETUMKA, IND. TER., Jan. 2, 1907.

To the Editor:—Kindly inform me through THE JOURNAL fully as to the technic of the so-called "Pubiotomy with the Needle," as mentioned on p. 2043 in THE JOURNAL of Dec. 15, 1906. Also explain how it aids labor. V. BERRY, M.D.

ANSWER.—Hocheisen (*Arch. of. Gyn.*, lxxx, p. 99), describes the operation as follows: "The patient is thoroughly disinfected in the usual way and placed on the operating table. The leg crutches are removed and the legs of the patient held on the backs of two assistants, one on either side. One assistant catheterizes thoroughly, aiding by pressure on the bladder from the outside. The urine is carefully examined for blood. This is important, as bloody urine is frequently found in prolonged labors, and if this be not determined beforehand, one will not be able to say afterward whether the bladder has been injured during the pubiotomy or not. One now carefully examines again to see if delivery can be effected without pubiotomy. If it can not, a Bumm's needle is introduced opposite the inferior border of the symphysis between the labium majus and minus, the latter of which, with the clitoris, is displaced medially. The needle, by depressing the handle and under guidance of the fingers of the left hand, introduced into the vagina, should hug the bone closely, and at no time should it fail to touch raw bone. At first the needle is directed toward the tuberculum pubicum; it soon, however, passes more medially, and is finally directed so as to come out in the midline. When the point of the needle appears through the skin an assistant attaches a saw (Gigli's) armed with one handle, and the operator then draws the needle back. The second handle is then fixed to the saw. A nurse passes a long sterile towel in a figure of 8 around the patient's knees and ties it. The two assistants hold the legs together. By holding the saw as perpendicularly as possible, the bone is sawed through until only the bridge of soft parts, i. e., the skin, etc., remains, and until this can be pressed into the gap between the ends of the bone, only then is it certain that the anterior periosteum and ligament have been completely severed, which is necessary in order to permit sufficient separation of the bones. In this manner we have never met with any hindrance due to the ligamentum arcuatum inferius (sub-pubic ligament) which is either completely severed by the saw or so arroded that it tears completely when the bones separate. The saw is withdrawn and the openings immediately compressed, while a large compress is forced above and behind the symphysis, and a second one against the vulva. One-half minute compression suffices. After labor has been completed the blood which has accumulated in the wound made by the saw, is pressed out, the two small openings closed with catgut and a dressing and bandage applied." The operation aids labor by permitting the iliac bones to spread laterally, thus increasing the pelvic diameters. It has a limited range of usefulness and may be considered when the disproportion between the size of the child's head and that of the interior of the pelvis is too great to permit the birth of a living child yet not great enough to demand Cesarean section. The available conjugata vera may be increased on an average from 1 cm. to 1.5 cms. by the operation.

GLUTEN FLOUR AND SACCHARIN IN DIABETIC DIET.

ISLAND POND, VT., Jan. 3., 1907.

To the Editor:—In the article by Dr. Max Einhorn on "The Dietetic Treatment of Diabetes Mellitus," published Dec. 29, 1906, why did he not include gluten flour in the diet list for diabetes? I would also like to know what he thinks of saccharin as a substitute for sugar. H. E. SARGENT.

ANSWER.—This letter was referred to Dr. Einhorn, who replied as follows: "1. Gluten flour contains a great deal of starch, any way, and for this reason its advantages over ordinary flour are not so great. 2. Saccharin is no article of food, and for this reason can replace sugar only with regard to taste, but not as a food."

Medical Organization

The Importance of County and istrict Societies.

Dr. J. C. Larkin of Hillsboro, Ohio, President of the First Councilor District Medical Society, delivered an address at the meeting of the District Society, held at Cincinnati, Nov. 8 and 9, 1906, in which he discussed the work and value of county and district societies. Dr. Larkin said in part: "While a casual observer may think that but little work has been accomplished in the past few years, yet careful inquiry will disclose that in every county society in the first district there is more interest being taken and more work being done in one year than in any previous five years. There are men attending county societies and state meetings to-day who did not know that such organizations existed in the past. . . .

"The majority of the members of the medical profession are at the same time the most unselfish and the most selfish of all beings in the world. The doctor is unselfish in matters pertaining to his own patients, but he is most selfish when the other doctor is concerned, forgetting at once that the injury done is not only an injury to the particular individual against whom his animosity is directed, but to the profession he represents and himself as well. It is the duty and the business of the county society to dispel this illusion, to break down the ill feeling and jealousies which exist and to crown hard-earned merit as it deserves. . . .

"We want to make the influence of the county society so strong that no decent, self-respecting physician can afford to be without its portals. We want to make its local influence so great that no legislator can ignore its warnings, and when we ask in the name of humanity that certain laws be enacted for the general good they will heed our demands and be only ready to do our commands. . . . Members of societies should make it their duty to spread the knowledge of what the profession at large is doing for the people in a disinterested way. Teach them that physicians are high priests of health and not sordid creatures who try to get rich from their infirmities and frailties. Show them that our greatest good can be rendered in preventing diseases. Impress on their minds that it is worth more to prevent an individual from having tuberculosis than it is to treat him for a year or two and then have him die, or perhaps to prolong his sufferings for

three or four years. Never let the people forget that the vast majority of diseases are curable and preventable if taken early enough, and that we are charging them for superior knowledge and not for pills and prescriptions; that their health and that of their family is as important as their farms, their stocks or their homes. . . ."

A New Law in Utah.

The Legislative Committee of the Utah State Medical Association has decided to work for the adoption of a new medical practice act and to provide for reciprocity. A special meeting of the state society was called for January 16, to consider the proposed legislation for the profession. The Committee on Medical Legislation has also endorsed the Pure Food Law as adopted by Congress; the enactment of a law for Utah, similar to the North Dakota Pure Food and Drug Law; the action of the State Board of Health in initiating a movement for the establishment of a state hospital for epileptics and the feeble-minded; the enactment of a law establishing a receiving hospital for cases of suspected insanity, where the patients could be observed and treated for thirty days before removal to the state hospital for the insane; resolutions asking all members of the profession in Utah to oppose the reduction of any insurance examination fees were recommended to the state society for adoption.

The Utah Medical Society adopted resolutions at its meeting on January 9, approving the new medical practice act for the state, especially the proposition authorizing the board to revoke licenses under certain conditions. The society also adopted resolutions to the effect that physicians giving expert or scientific evidence should be recompensed accordingly rather than by the statutory witness fees. The society also opposed the adoption by Congress of the proposed osteopathic bill.

Services to State and Municipality.

The work of two busy practitioners is thus commented on in a recent issue of *Collier's Weekly:*

"The new president of the Municipal Voters' League in Chicago is the type of citizen whom, it must be confessed, that city is more likely to bring to the front than some of its populous rivals. There as elsewhere lawyers are more likely than other men to be found in public life, but two of the most notable instances of civic service lately have been furnished by physicians. The new president of the league is Dr. Henry B. Favill, and the other physician to whom we refer is Dr. Frank Billings. Both of these men, in the very front of their profession, overburdened with labor and responsibility, have assumed heavy responsibilities for the state. The mere list of the civic activities of Dr. Billings during the last ten years would be voluminous. His latest and most important work of that nature, however, was when he assumed, at the earnest request of Governor Deneen, the presidency of the State Board of Charities. These institutions are now being thoroughly overhauled with the view of bringing them up to the highest scientific practice, and the state is fortunate in having the benefit of Dr. Billings' knowledge, executive ability and power of work. Dr. Favill has been much interested in the general life of the City Club, and last year he accepted the chairmanship of the committee on political action there. He is much in earnest, and, with his great ability, fine character and entire disinterestedness, the Municipal Voters' League, with him as its chief, should unquestionably continue in a brilliant manner its valuable career."

In the January number of the *Journal of the Michigan State Medical Society*, the editor says, under the heading "What Was Accomplished by Our Profession During 1906," "A most important tendency of the times is the activity of the profession in the matter of educating the people of this country in matters pertaining to health. We are just awakening to the sense of our duty to our fellowmen, and a most important awakening it is, for if the medical profession does not teach and lead the way in the great health problems which are to be solved, others will attempt to do so and public sentiment will be awry. We are only at the beginning of this campaign of education, yet much has already been accomplished in the spread of knowledge concerning tuberculosis and a good start has been made in public instruction in sexual hygiene." In the same number appears a bulletin issued by the Committee on the Study and Prevention of Tuberculosis, which should be read by all county and state secretaries.

Insurance Fees and Lodge Practice

Club Practice in Laporte, Ind.

The statement has been made repeatedly in our editorial columns that the physicians of the United States will sooner or later be forced to fight the same pernicious system of lodge and contract practice, which has developed to such an extent in Germany, England, and elsewhere. In September, 1905, the Fresno County Medical Society of California was forced to adopt resolutions condemning the efforts on the part of the local lodge of the Fraternal Order of Eagles, to secure medical attendance for members and their families at a purely nominal figure. Various other county societies, in the past two years, have had similar experiences. Evidently, neither the large city nor the small town is exempt from this experience. Nearly a year ago the Chicago Medical Society appointed a special committee to consider this subject. This committee has been accumulating material and data since that time and is preparing a report.

A recent occurrence will illustrate the need of watchfulness and prompt action on the part of the organized profession. A letter was received, by the advertising department of THE JOURNAL, from the Fraternal Order of Eagles of Laporte, Ind. The writer stated that the lodge was in need of a young physician to look after its members and to render them medical attention. For this work the lodge guaranteed $500 a year, and intimated that as "the right man would get the backing of the members of the lodge," it would be a "good thing for a bright young man looking for a good location." The calm assurance with which it was intimated that the backing of 250 individuals (each of whom was trying to get his yearly medical bill reduced to $2) would be of any value to a conscientious physician, is worthy of note.

Instead of inserting the advertisement, a physician of Laporte was asked for the facts. He replies:

> The Eagles' lodge and the Owls' lodge were organized here by outside parties to exploit the physician, and, after peddling their offer around among the physicians the Eagles finally secured one of the local men to act as lodge physician on contract for a year. All the physicians, however, finally came together, and adopted the enclosed resolutions, which were signed by every physician in Laporte. The Eagles' contract expired several months ago, and they have made every effort to find a successor, without avail. The advertisement carries its own moral. They guarantee about $500 by 250 members, i. e., $2.00 a member, medicine included.

The writer goes on to say that it would be an excellent thing if the physicians of every city could forestall lodge contract practice by united resistance at the beginning.

The physicians of Laporte are to be congratulated on the stand they have taken. It is to be hoped that their opposition to this vicious lodge-practice business will be so thoroughly successful as effectually to put a stop to any further efforts along that line in Laporte. The experience of physicians in that city should serve as a warning to the members of the profession, and especially to county societies in every part of the country. There is no possible argument by which such prostitution of the profession can be justified, either from the standpoint of the physician or of the patient. The only person who can possibly profit by such an arrangement is the middleman, who, if he can reduce some short-sighted physician to a state of peonage and farm out his "professional services" (God save the mark) for $2 a year to gullible members of the laity, who may be overcome by their bargain-counter proclivities, may realize a handsome income. To any one else such an arrangement can only result in disappointment. It is to be hoped that in every community in which an effort is made to secure the services of physicians on such ridiculous terms, the members of the local profession will follow the example of the Laporte physicians and settle the matter promptly and finally.

Society Resolutions on Insurance Fees.

In addition to the societies noted in previous numbers of THE JOURNAL, the following societies have adopted resolutions in favor of the maintenance of a $5 fee for insurance company examinations:

Center County (Ky.) Medical Society.
Red River (Texas) Medical Society.
Aberdeen District (S. D.) Medical Society.
Smith County (Tenn.) Medical Society.
Clarendon County (S. C.) Medical Association.
Monterey County (Cal.) Medical Society.

West Virginia State Medical Association.
Schoolcraft County (Mich.) Medical Society.
Flathead County (Mont.) Medical Society.
Dade County (Fla.) Medical Society.
Auglaise County (Ohio) Medical Society.
Franklin County (Pa.) Medical Society.
Randolph County (Ark.) Medical Society.
Marin County (Cal.) Medical Society.
Clarksdale and Six Counties Medical Society.
Beaverhead County (Mont.) Medical Society.
Las Vegas (N. M.) Medical Society.
Lenoir County (N. C.) Medical Society.
Central Willamette (Ore.) Medical Association.
Platte County (Mo.) Medical Society.
Laflore County (Miss.) Medical Society.
Whiteside County (Ill.) Medical Society.
Green County (Ala.) Medical Society.
Etowah County (Ala.) Medical Society.
Clark County (Ga.) Medical Society.
Monroe County (Ark.) Medical Society.
Kent County (R. I.) Medical Society.
Medical and Surgical Society of North Aroostook, Maine.

The following resolutions have been adopted by the Allegheny County (Pa.) Medical Society:

WHEREAS, Many of the life insurance companies have notified their medical examiners of the reduction of the examining fee from $5 to $3;

WHEREAS, We, as physicians, realizing the responsibility incident to proper examinations believe such reduction to be unjust; therefore, be it

Resolved, That the Allegheny County Medical Society does hereby declare such reduction to be unjust and respectfully requests that the members of this society do not accept such reduction of fee; and, further, be it

Resolved, That it is the sense of this society that hereafter for each examination in which any analysis of the urine is required the minimum fee should be $5.

Society Proceedings

COMING MEETINGS.

Med. Society of State of New York, Albany, Jan. 29, 1907.
Medical Society of Missouri Valley, Omaha, Neb., March 21-22, 1907.

PHILADELPHIA SOCIETY FOR THE STUDY AND PREVENTION OF SOCIAL DISEASE.

Regular Meeting, held Dec. 20, 1906.

The President, HON. A. M. BEITLER, in the Chair.

Venereal Disease Among Children.

DR. THOMAS MORGAN ROTCH of Boston emphasized the important fact that the laity as well as physicians should understand thoroughly the dangers of syphilis and gonorrhea in young children. A more exact and extended knowledge of these diseases should be acquired by physicians in order that they not only should recognize obscure cases, but also that they should not brand innocent people with the suspicion that they have acquired this disease when they really have not. He claimed that the public should be protected from the stigma of syphilis and gonorrhea as well as from the diseases themselves. Lantern slides were shown illustrating some phases of syphilis in early life.

Criminal Aspects of Venereal Infection Among Children.

DR. W. TRAVIS GIBB of New York City stated that sexual crimes against young children are much more common than is supposed. These conditions were largely attributable to the moral and sanitary environments in which the people of the tenements are huddled together without decent privacy. In his association with the New York Society for the Prevention of Cruelty to Children for 15 years he has examined over 800 girls ranging in age from eight months to 16 years on whom rape and other crimes had been committed. Almost 13 per cent. of all the children suffered from venereal disease, and of these 81 had gonorrheal vaginitis; 2½ per cent. had chancroids. A very small number of cases of syphilis were noted in the number examined. This rarity was attributed to the fact that the cases were examined in a short time after the crime had been committed, when not sufficient time had elapsed for the development of the characteristic evidence of the disease. In spite of the large number of cases brought to the attention of the Society, Dr. Gibb is of the opinion that it is but a small proportion of the actual number of such crimes that occur, stating that the great majority of children never tell what has happened to them.

Social Economics of Venereal Disease.

PROF. C. W. A. VEDITZ of Washington, D. C., said that the increase in the number of deaths due to venereal disease is startling, compared with the increase in deaths due to other diseases. This increase for the registration areas is from 3.4 per cent. per 100,000 in 1900 to 4.8 per cent. per 100,000 in 1904. Admitting the difficulty of securing accurate data concerning venereal disease in other countries, he quoted one authority as stating that there are 4,000,000 persons in France who have syphilis, and who have it in a contagious form. Other estimates exceed this, while not a few are less.

He thinks that the attitude of the public toward venereal disease is apt to undergo much the same change that it has undergone with regard to tuberculosis; from the general tendency to keep the disease secret, there came with the knowledge of its great extent and danger open attention to the subject. This was succeeded by scientific examination, naturally resulting in a more manifold and determined effort to root out the disease.

In regard to syphilis Professor Veditz feels that the public is emerging from the first of these stages and entering on the second. The social economist of to-day is interested in raising to the highest level the mental ability and physical efficiency of a community. The importance, therefore, is obvious of the removal of diseases of all kinds, and particularly of those which are hidden away from the public gaze. He believes it exceedingly important that the factor in economic supremacy of the possession of a population which is vigorous physically and mentally should be taken care of, and to the extent to which these are pushed in the background will depend the position of the United States among the nations. From the social economist's point of view he called attention to the necessity that the dangers of venereal disease be carefully studied and movements set on foot looking to the restriction of the disease along with the other two great plagues of mankind—alcoholism and tuberculosis.

Laity and Venereal Disease.

TALCOTT WILLIAMS, ESQ., speaking as a journalist, declared that the laity of America would never either register prostitution or insist on its compulsory examination, neither would it segregate prostitution. He called attention to the fact that segregation is a state nearly always existing in frontier and rudimentary conditions, and that as life becomes more complex segregation disappears. His own judgment is that registration, compulsory examination and segregation belong to a less developed state of society and are the remains of a subconscious attempt on the part of society to segregate and brand the social evil. The problem of venereal disease must be met without the possible application of these artificial restrictions. He believes that within the next 40 years society will suppress the outward manifestations of prostitution. Instances were cited showing that this suppression has already been evidenced. He does not know, however, that this means a suppression of the evil.

That the laity will raise the age of consent he also expressed his confident belief. The rising curve of the age of consent, which in the memory of many had begun in many of the states and in many European countries at 12, will soon reach 18 or 20. The chief advantage of this would be not in a checking of crime, but in the conviction of the criminals. Furthermore, the laity is certain to increase the matter of personal prophylaxis against the spread of the disease. From his investigations he has already observed marked evidence of this. This, however, while decreasing the danger of infection, does not remove it.

He deprecated the fact that editorial discussion in the newspapers of the social evil is unpopular, and he believes that the laity can do much to correct this mistaken idea, feeling that more light is always destructive of evil.

Clergy and Venereal Disease.

REV. FLOYD W. TOMKINS referred to the minister's duty in exhortation, teaching and practice. He should exhort first of all that his people should know the danger from the spread of the disease; and, with a realization of the unspeakable evil

he should urge his people to work against the segregation or licensing of the vice which largely creates the disease. He should further exhort to a method of education in the public schools by which the boys and girls should be taught the dangers of the disease. The minister should also exhort to a higher civilization by the marriage of only those persons who are fit to enter into marriage.

In regard to teaching, the men and boys, the women and girls should be taught the danger of the disease and of the safeguards against it. They should be taught, fearlessly and frankly, the dual evil, that the fallen man is just as bad as the fallen woman. He is utterly disgusted with the judgment which welcomes in the social circles the man who has defiled himself, while the woman—sinning, perhaps, from love—is damned forever. There should be taught also the terrible consequences of this sin, not only physically and mentally, but morally and spiritually.

Concerning the subject in connection with practice, he decried the indiscriminate way in which ministers perform marriages. He believes the minister's influence should tend to make it impossible that marriages should be performed without some previous knowledge of the parties. In his own practice he feels that the minister must come near to the physician in making, in a certain degree, public the results of this disease. He asks whether it is not the duty of the physician, with knowledge that a man about to be married is diseased, to so advise the minister. The minister may then say to the man that he is unwilling to marry him unless he can give a certificate showing that he is free from the disease. He deplores the fact that the publicity which marks dwellings with smallpox and signs of other disease should do nothing whatsoever about this disease, and declares that society is simply stagnant at this point. He believes it the minister's business to do something concerning it, to plead and pray that the terrors of the disease may be made known and its dangers guarded against. In closing he desired that it be known by the members of the medical profession and of the laity that the ministers are ready to work, heart and soul, in this matter.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Dec. 12, 1906.

The President, DR. GEORGE W. WEBSTER, in the Chair.

Symposium on Exophthalmic Goiter.

DR. FRANK BILLINGS said that the chief symptoms of exophthalmic goiter are tachycardia, exophthalmos, enlargement of the thyroid gland and tremor. In addition to this, there occur in many cases a secondary anemia, emaciation, vomiting, diarrhea, an erythematous flush of the skin, sometimes an infiltrating, hard edema of the skin; in rare instances scleroderma, and sometimes pigmentary changes, throbbing arteries, general headache and shifting neuralgic pains; a moderate irregular type of fever, nervous irritability, mental excitement or depression, myasthenia, and profuse sweating. The disease occurs more frequently in women than in men, in the proportion of seven or eight to one.

He has the records of 61 patients who have come under his personal care; 8 were males, and 53 females. The ages of the males ranged between 23 and 48 years; of the females, between 17 and 54. Of the males, two were acute and the remainder chronic forms of the disease. One male had suffered from goiter for several years preceding the onset of the symptoms, and with 7 the goiter developed as an incident of exophthalmic goiter. Of the females, 32 had no goiter preceding the development of the disease, while 20 had suffered from goiter for from three to twenty years. Ten of the 53 females suffered from acute exophthalmic goiter and in all of these acute cases goiter was primary; that is, developed as a part of the disease.

In an analysis of the 61 patients it is found that of the probable causes, severe grief preceded the attack in 4; 6 had suffered from a severe attack of la grippe; in 2 cases overstudy was ascribed as the cause. Two had severe operations and the disease developed immediately afterward. The disease developed at the climacteric in 2; goiter existed in the family in 15 cases. In one family there were 6 individuals who suffered from goiter.

Tachycardia existed in all at some time in the history or during the clinical observation. The pulse rate was high, ranging from 100 to 160, and even to 180. Tremor was also present in every patient at some time during the observation. It was not as constant as the tachycardia, and in some instances occurred only during excitement. The tremor was fine, varying from 6 to 10 to a second. Exophthalmos was present in 4, and absent in 4 of the males. In the females it was present in 38 and absent in 15. It was present in but one eye in 2 of the females. Graefe's sign was present in 41 females, absent in 5, and not noted in 7. It was present in 4 and absent in 4 males. Moebius' sign was present in 4 females and absent in 49. One suffered from chronic internal strabismus. Moebius' sign was present in 1 male and absent in 7. Stellwag's sign was present in the severe cases of exophthalmos and absent in others. Thirty patients sweated profusely. Dry skin and dry hair occurred in 2, and in 20 there was no disturbance of the secretions of the skin. Loss of weight from 5 to 40 pounds occurred in 29. There was a gain in weight in 2, and no apparent change in the remainder.

Twelve of the patients had diarrhea. Constipation occurred in 7, and the bowels were in a normal condition in the remainder. Nausea and vomiting occurred in 12, while these symptoms were absent in the remainder. Sleeplessness was a common symptom and present in all of the acute cases. Most of the patients were emotional. Headache of the neurasthenic type was common. Myasthenia affecting special groups of muscles was common. In all of the acute cases the heart muscle showed the effect of the toxemia by a quick nervous action and by the varying degree of dilatation of the left ventricle which was commonly found. In one chronic case with acute exacerbations multiple eruptions occurred on the skin, especially of the lower extremities, associated with persistent itching. In 3 cases acute exacerbations of a chronic condition occurred from the use of the thyroid extract used by the physician as a remedy. In one male a simple goiter treated with thyroid extract developed into a typical exophthalmic goiter; the patient recovered on the withdrawal of the remedy. Pregnancy occurring in 3 patients aggravated the symptoms, and in 2 instances the disease became so acute that evacuation of the uterus became necessary. In this instance the patient returned to a chronic form of the disease after an almost fatal ending. Albuminuria with hyaline and a few finely granular casts occurred in 11 cases. Glycosuria was present in 1 patient.

All but 3 of these patients were treated by medical measures. In more recent times, since the development of the so-called serum treatment, thyreoidectin was used in 12 cases. The powder form of the serum was used in a dose of from 15 to 40 grains a day in divided doses, with varying results. In no instance has he secured the favorable results recorded by many other physicians. In 2 instances the symptoms were aggravated by the remedy. For five years, on the suggestion of Dr. Forchheimer, of Cincinnati, he has used the hydrobromate of quinin in 8 cases. The drug has been given in from 15 to 30 grains in divided doses in 24 hours. It has afforded a more uniform improvement in the symptoms due to vasomotor disturbances than any other drug. Dr. Billings used the serum of thyroidectomized goats prepared under the direction of Moebius, in 1 male. This patient was put upon rest treatment in the hospital and in addition to the full doses of the serum hydrobromate of quinin was given. The improvement was steady and continuous. He has not had any experience with the use of the specific serum prepared by Beebe, of New York, and used by Rogers and Thompson in the treatment of 39 or more cases. He has not used the milk of thyroidectomized goats which has proven beneficial in the hands of many reporters. Three of the patients included in this group were operated on, and of this number 2 made satisfactory recoveries and have remained well, while one died on the operating table.

DR. DEAN D. LEWIS discussed the pathology of exophthalmic goiter; while DR. R. B. PREBLE spoke of the cardiac symptoms.

Neurologic Complications.

DR. L. HARRISON METTLER stated that it would be an easy thing to enumerate the many complications that have been observed in exophthalmic goiter, but such an eumeration is neither very illuminating nor especially scientific. What is needed is an accurate definition of exophthalmic goiter and not a mere conglomeration of the symptoms. So many manifestations that have been assigned as secondary symptoms of exophthalmic goiter belong to other well-defined affections that it is hard to draw the line of demarcation between the two sets of diseases; and what is needed more than mere additional observations is the formulation of some principles, if possible, whereby we may say in a given case, this manifestation belongs to exophthalmic goiter, and this does not.

Dr. Mettler suggested for practical purposes three principles that he believed would be found generally useful in distinguishing the presence of any diseases in a patient who may at the same time have exophthalmic goiter. The first principle is to keep close to the narrow definition of exophthalmic goiter as being represented in one or more only of the cardinal symptoms, tachycardia, struma, exophthalmos, no matter what the other neurasthenic, hysteroid or general nervous manifestations may be. Whether regarded as a mere syndrome (which it probably is) or as the essential expression of the disease, the famous triad in part or in whole must be the basis of diagnosis and nothing else. The second principle is that we should always endeavor to align the so-called secondary or nervous symptoms of exophthalmic goiter with any other corresponding symptoms present that belong to some other distinct, well-known trouble. For example: An exophthalmic patient who presents a decided neuropathic heredity, excessive emotionalism and mental instability, concentric narrowing of the visual fields, polyuria, general hyperesthesia and paraplegic manifestations has, in all probability, hysteria, in addition to the thyroid intoxication. As each of these symptoms belongs to hysteria and yet has been at times assigned to exophthalmic goiter, the standpoint from which they are viewed will very materially modify one's opinion as to the etiology, prognosis and treatment of the case in hand. The third principle is that all organic diseases and all symptoms that represent an organic lesion are complications rather than a mere part of the exophthalmic goiter. Cardiac valvular lesions, tabes dorsalis, ocular palsy, multiple neuritis, for example, are complications, and should not be confused with the symptomatology of exophthalmic goiter.

Ocular Signs and Symptoms of Exophthalmic Goiter.

DR. CASEY A. WOOD, said the chief reason why the eye symptoms are of extreme value, particularly in diagnosis, is because of their easy detection and because of the fact that one or more of them invariably occur early in the disease, and because in doubtful cases they may be relied on to differentiate exophthalmic goiter from other forms of exophthalmos, tremor, struma, tachycardia, and the like. Exophthalmos is commonly the first eye symptom to attract the attention of the observer. Before the exophthalmos appears, retraction of the upper lid and widening of the interpalpebral fissure (Dalrymple's sign) is commonly seen. Infrequent winking is also an important and constant sign of exophthalmic goiter. Graefe's sign is a most valuable one. It occurs early, is quite constant, and although it may be present in Thomsen's disease and sometimes fails altogether, should always be searched for in doubtful cases. Insufficiency of convergence, or the signs of Moebius, depends on the fact that the stretched internal recti muscles are unable to move the bulging eyes inward to the same extent and with the same facility that they can normally situated globes. Symmetrical paresis of the external recti muscles is sometimes a sign of exophthalmic goiter, and there may be apparent excess of convergence.

What he regards as most valuable evidence of the disease is Becker's sign. He refers to spontaneous pulsation of the retinal artery. Epiphora has been seen a number of times in exophthalmic goiter, and may be very troublesome. Dryness of the eyes is one of the commonest complaints made by these patients. Loss of sensation of the cornea and conjunctiva has several times been noticed and doubtless has been overlooked in many other cases, as it is an objective symptom and does not attract the attention of the patient. Circumscribed edema of the eyelids, as well as pigmentation of their skin surface, has been occasionally seen, but these are probably mere accidents and form a part of the dermal changes seen elsewhere on the body.

Medical Treatment of Exophthalmic Goiter.

DR. WILLIAM E. QUINE discussed rest, diet, hydrotherapy, electricity, the Roentgen ray, organotherapy, serumtherapy, medicinal therapy, saline purgatives, etc. Speaking of serumtherapy, the author said that two kinds of serum have been introduced: (a) The serum of thyroidectomized animals, and (b) the serum of animals treated with increasing doses of thyroid extract. Neither of these products has furnished important results.

In medicinal therapy iodin usually proves hurtful. The same is true of digitalis and strychnin. Belladonna, given in the dose of 10 minims of the tincture, three or four times a day, is recommended by more writers than any other medicine; but to the author it seems inferior to some others. Forchheimer recommends the employment of hydrobromate of quinin so strongly and with such explicit references to its value as to command attention. He gives it in the dose of five grains every six hours, sometimes alone, and sometimes with the addition of one grain of ergotin to each dose. Salicylate of sodium, in the dose of ten grains, repeated every six or four hours, usually subdues symptoms appreciably for a short time, but its effects are not lasting. As to saline purgatives, the phosphate and the glycerophosphate of sodium are of undoubted value. In his own practice improvement of the patient under their use has rarely failed to occur.

Aside from the saline purgatives, the medicines he has learned to rely on mostly are strophanthus, codein and the bromids. Pulverized strophanthus in the dose of one grain, codein, 1/3 or 1/2 grain, and bromid of sodium in the dose of 20 grains, each repeated at regular intervals three or four times in twenty-four hours, often prove very serviceable. It is usual for him to give two of these medicines, but not codein and the bromids at the same time. He estimates that 60 or 70 per cent. of the cases of exophthalmic goiter terminate in recovery under medical treatment. It must be remembered, however, that some cases terminate spontaneously in this way, and he has witnessed three instances in which the occurrence of pregnancy seemed to contribute to the result. Charcot has recorded a similar observation. When medical treatment has been well sustained for six months without distinct benefit to the patient, or if the patient should get worse under the best medical treatment that can be devised, surgical treatment must be considered.

DR. ARTHUR DEAN BEVAN reviewed the development of the surgery of the thyroid gland, and reported the results obtained in seventeen cases of exophthalmic goiter on which he operated. Two of these patients died, one on the table and the other shortly after operation.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, held at Baltimore, Dec. 11-13, 1906.

(*Continued from page 251.*)

Puerperal Thrombophlebitis of the Pelvic Veins.

DR. GEORGE H. NOBLE, Atlanta, directed attention to the surgical aspect of the question. Of the 32 cases of puerperal sepsis collected, the infection was divided as follows with reference to location: Metrophlebitis, 11; metrolymphangitis, 4; abscess in parametrium, 8; thrombophlebitis (suppurating) of broad ligament, 2; suppurative peritonitis, 7; and deep laceration of vagina, 7. The author thinks considerable saving of life may be made by early recognition of the disease and prompt interference.

Any puerperal case with pelvic lesions, variable temperature and climbing pulse of three to four weeks' duration, with-

out signs of improvement, justifies an operation of some kind, especially if the uterus proves negative as the source of trouble. If a mistake is made in diagnosis, and the location of the infection is found in the Fallopian tubes or abscesses in other parts of the pelvis, no surgical error is committed, for they, too, are in need of serious attention.

There are several plans of procedure. First, excision of the thrombosed veins; second, ligation of the thrombosed veins; third, hysterectomy. In addition to these, attention should be given to the complicating conditions.

In the summary of the small number of cases accessible, the results are as follows: Resection of veins, mortality, 28 4/7 per cent.; ligation of veins, 44 4/9 per cent.; hysterectomy, 64¼ per cent. Dr. Noble ventured the assertion that until further experience shall have worked out the solution of this problem, the opinion must be accepted that early recognition of septic thrombosis of the pelvic veins, followed by prompt excision, is the best method of relief we can offer patients in this disease.

Surgical Treatment of Tuberculosis of the Kidney.

DR. HOWARD A. KELLY, Baltimore, reported a surgically treated series of 62 cases of kidney tuberculosis. This list embraces 57 nephrectomies (including simple nephrectomies, and those combined with removal of the ureters, and in a few cases also parts of the bladder), four nephrotomies and one partial nephrectomy. The extreme rarity of a spontaneous healing, even by a complete destruction of the kidney and occlusion of its ureter, is emphasized. Dr. Kelly has never met with this condition. The disease in all cases sooner or later involves the bladder, and from that leads to death, either by infecting the sound kidney or by extensively metastasing to other parts of the body.

As tuberculosis of the kidney once started destroys the kidney, and as the cases become more unfavorable after bladder involvement, a nephrectomy should be done just as soon as the diagnosis is made. The importance of this early operation is shown by the results in the 21 cases treated comparatively early in the course of the disease, i. e., with no bladder involvement, or only slight involvement around the ureteral orifice of the affected side. There has not been a death in this group, and all have been cured. Contrasting with this 36 cases with extensive bladder involvement, there were 4 primary, and within four years 5 secondary deaths, making a total mortality rate of 25 per cent. The statistics from the nephrectomies are 57 cases, 4 primary deaths, or 7 per cent. mortality; a total of 7 deaths within six months, 12.2 per cent. mortality; and a total number of deaths of 9, 16 per cent. mortality. Excluding from the series 9 cases with residual bladder trouble still present, all of which, except one, have been operated on within a year and a half, there remain 48 cases, with 39 complete cures, and 9 deaths, a cure rate of 76.93 per cent.

Tuberculosis of the Kidney.

DR. CHARLES P. NOBLE, Philadelphia, reported ten nephrectomies for tuberculosis, 9 of the patients being women. In each of the ten cases the tuberculosis of the kidney was primary, but in the man the lungs were also involved. This case ended fatally six weeks after nephrectomy in the natural course of the disease. The nine women not only recovered from the operation, but were restored to health. Three of them suffered from permanent loss of capacity in the bladder, due to the healing of extensive ulcers. In most of the cases the complicating cystitis and ulceration underwent a spontaneous cure after the nephrectomy.

The following points were emphasized: No evidence of ascending tubercular infection has come under the writer's notice. In each of the cases the tuberculosis of the kidney was primary, and the bladder, when involved, was infected by pus discharged through the ureter. The results of early nephrectomy for tuberculosis of the kidney are very satisfactory. The profession should be educated to appreciate these facts and to diagnose tuberculosis of the kidney at an early stage, before extensive involvement of the bladder or general dissemination of the disease has occurred.

Vaginal Cesarean Section with Subsequent Pregnancy and Labor.

DR. JOHN F. MORAN, Washington, D. C., stated that at the last meeting of the Association he reported two cases of vaginal Cesarean section, performed for eclampsia, both successful, and he now reports a subsequent pregnancy and labor occurring in one of them.

Dystocia Following Fixation and Suspension of Retroflexed Uterus.

DR. J. WHITRIDGE WILLIAMS, Baltimore, reported four cases and collected 34 from the literature in which Cesarean section had to be done following some method of fixation or suspension of the uterus.

DR. HENRY O. MARCY, Boston, gave a brief sketch of one of Baltimores greatest men, Dr. Horatio Gates Jameson, whose greatest contribution to surgery, he said, was the occlusion of arteries by the buried animal ligature.

Surgical Aspects of Gastric Carcinoma.

DR. JOHN B. DEAVER, Philadelphia, said that from 25 to 40 per cent. of all cancers in the body are primary in the stomach. Bryant, quoted by van Valzah and Nisbet, shows that in Baltimore there are 200 deaths annually from cancer; Boston, 300; Philadelphia, nearly 500; New York City, nearly 900. Of these, perhaps almost one-half are directly due to cancer of the stomach. Chronic gastric dyspepsia is the chief predisposing cause of the cancer.

By timely operation for the various causes of persistent indigestion, many a patient will be saved from developing gastric carcinoma. Early diagnosis of gastric carcinoma being so extremely difficult, and radical removal being only highly promising when an early diagnosis has been made, partial gastrectomy should be an operation limited to cases of malignant disease operated on for symptoms of pyloric obstruction or other gastric affection supposedly benign, in which the existence of cancer, though perhaps suspected, can not be certainly diagnosed before operation. Partial gastrectomy is the preferable treatment for these cases. In cases moderately far advanced, gastroenterostomy should be preferred. Where the indication is to prevent starvation, jejunostomy is to be performed.

Vaginal Section as an Operation of Choice.

DR. HENRY T. BYFORD, Chicago, said that the cases adapted to vaginal section are mostly those in which the parts affected are more accessible from below, namely, those connected with prolapse and retroversion of the uterus, with prolapse of the ovaries or with adhesions low down in the pelvic cavity, and cases of hysterectomy or myomectomy for small fibroids as well as hysterectomy for other small neoplasms and malignant diseases of the uterus.

When the uterus is not to be removed, the author prefers the incision posterior to the cervix for those cases in which the uterus is retroverted or readily retrovertible and the cervix can be drawn well down near the vulva. The anterior incision has the advantage of enabling the operator to deliver the fundus into the vaginal entrance and also to draw the ovaries and round ligaments forward within easy reach. Among the disadvantages of the latter are a complicated wound which can not always be as satisfactorily sutured as the posterior incision, and the presence of the fundus in the vagina to interfere with manipulations, etc.

When there are special reasons for avoiding abdominal section, the field of vaginal section may be extended by removing the uterus, or if it be desirable to preserve the uterus by lateral colpotomy in connection with the anterior or posterior incision, or both. By ligating and severing the uterine artery, or by skirting or shaving the edge of the cervix with scissors or a sponge, and separating the broad and sacro-uterine ligaments from the cervix, space can be obtained for the introduction of the whole hand into the peritoneal cavity and for the employment of intraperitoneal illumination. The author has even extended the incision completely around the cervix, as for vaginal hysterectomy, separating the bases of

both broad ligaments as well as of the sacro-uterine ligaments and bladder, and afterward suturing the parts back to their original relationship, without any bad results. Through the opening thus made the torn or perforated rectum can be successfully sutured.

The author believes that while the utility of vaginal section will diminish with the perfection of the technic of abdominal section for pelvic conditions, there will always be a place for it, and the time has not yet come when a special training in gynecologic surgery can be considered as superfluous.

Appendicitis in the Negro.

DR. HUBERT A. ROYSTER, Raleigh, N. C., said that in order to obtain some information on this point he wrote to several surgeons practicing in southern cities having a large proportion of negro inhabitants; and the replies were unanimous in regard to the rarity of the disease in this race. During ten years he has removed the diseased appendix from negro patients 54 times. In 40 of the cases a pathologic appendix was found while operating for other conditions, such as pus tubes, fibroids, etc. Besides a few of these which contained pus, over one-half of the others were filled with fecal matter, usually soft. Practically, none of these cases presented a definite history of appendicitis, but only that of the original lesion. Fourteen cases of primary appendicitis in the negro were operated on, three in the first seven and a half years, and eleven in the past two and a half years. During the latter period the total number of appendix operations on both whites and negroes was 123, giving a relative frequency of practically 9 per cent. in the colored race.

Injuries and Diseases of the Hyoid Bone.

DR. RANDOLPH WINSLOW, Baltimore, reported six cases, and said that tumors of the hyoid bone are both malignant and innocent, in about equal proportion, and both require thorough removal with as much of the contiguous tissues as may be necessary. An early operation is as much to be desired in neoplasms of this bone as in those occurring in other parts of the body.

The following papers were also read: "Conservative Method of Managing Undescended Testicle," by Dr. Joseph Price, Philadelphia; "Gallstones Without Symptoms and Symptoms Without Gallstones," by Dr. Maurice H. Richardson, Boston; "Two Simple Surgical Tricks Worth Knowing, with Instruments Used," by Dr. Ap Morgan Vance, Louisville, Ky.; "Treatment of Hemorrhage by Direct Transfusion of Similar Blood," by Dr. George W. Crile, Cleveland (appeared in THE JOURNAL, Nov. 3, 1906, p. 1482); "Report of a Case of Rutured Ovarian Tumor with Complications," by Dr. Rufus B. Hall, Cincinnati; "Cysts of the Omentum," by Dr. R. E. Fort, Nashville; "Some Disjointed Observations on our Technic," by Dr. A. Morgan Cartledge, Louisville; "Influence of Respiration on Development of the Chest Deformity in Scoliosis, with Its Relation to Application of Plaster Jacket," by Dr. Michael Hoke, Atlanta; "Some Suggestions in Regard to the Surgical Treatment of Empyema," by Dr. Samuel Lloyd, New York; "Normal Involution of the Appendix," by Dr. Robert T. Morris, New York; "Splenectomy, Indications and Results; Report of Five Successful Cases," by Dr. W. P. Carr, Washington, D. C.

Medical Legislation

The Osteopathic Bill in the National House of Representatives.

The osteopathic bill that was introduced in the United States Senate and carried surreptitiously through that body by Senator Foraker, is now pending in the Committee on the District of Columbia of the House of Representatives. The committee has been asked to grant a hearing to the medical members of Congress—Dr. A. J. Barchfeld (Pa.), Dr. H. D. Burton (Del.), Dr. E. W. Samuel (Pa.)—who were authorized by the Committee on Medical Legislation and the National Legislative Council, assembled in joint conference, to appear as a committee of the American Medical Association. In the meantime the bill published in last week's issue of THE JOURNAL (page 253), has been made the basis of a general referendum. Members of the National Auxiliary Legislative Committee having this referendum in hand will greatly assist the medical committee in Congress above alluded to, by at once procuring as many signatures as possible and forwarding them without delay to the chairman, Dr. A. J. Barchfeld, House of Representatives, Washington, D. C.

CONFERENCE OF THE COMMITTEE ON MEDICAL LEGISLATION AND THE NATIONAL LEGISLATIVE COUNCIL.*

Annual Meeting, held in Washington, D. C., Dec. 13-15, 1906.

(*Concluded from page 255.*)

The Osteopathic Bill for the District of Columbia.

At the instance of Dr. L. M. Halsey (New Jersey) who was absent, the Osteopathic Bill was considered in the committee of the whole. After the committee had reported the conference took up the question of

Uniform Pure Food and Drug Legislation by the States.

THE CHAIRMAN: Gentlemen, if you will pardon me, I wish to interrupt this order for the time being. We are honored this morning with the presence of a distinguished gentleman, one who has conferred a great boon on the country by his advocacy of the Pure Food and Drug Bill, which passed the last session of Congress. This gentleman has kindly come here to-day, leaving his many public occupations to talk to us a little about the question that will presently engage our attention, namely, that of securing uniform legis' ion by the states as supplementary to the national legislation on the subject of pure food and drugs. I have the honor of introducing to you Senator Heyburn, of Idaho.

SENATOR W. B. HEYBURN, of Idaho: Mr. Chairman, I am not as well organized to present suggestions of use to you as I should be, because the call same suddenly, and I can only talk to you from the standpoint of the general consideration that I have given to the subject both before and since the enactment of the Pure Food Law. I have taken up the question for consideration with that department of each of the states. It so happens that the state from which I come to the Senate, Idaho, has an excellent law on the subject of pure food and the protection of the people against vicious practices, both of manufacture and distribution. I took up the question in my own state a number of years before I came to the Senate, so that it was not a new question to me. I find now a necessity for uniformity in regulations under the terms of the act. The representative, or rather the administrative, department of the government can make certain rules and regulations. I have been keeping an observant eye on their action in that direction. And I observe a danger that, by rules and regulations, they will weaken the force of the legislation. The legislation must consider at all times the basis on which the action of the people interested in this subject and those who have to execute the law must rest.

PURE FOOD LAW REGULATIONS.

Now some of the rules and regulations—and I will not take time to point them out in detail this morning, because I have not them before me—but some of those rules and regulations are calculated to emasculate the legislation. We must depend on the gentlemen of the medical profession throughout this country to keep a vigilant eye on that point and otherwise to suggest and to aid us. I do not mean any harsh criticism or do I wish to be understood as criticising those who have undertaken to formulate rules and regulations for the enforcement or carrying into effect of the Pure Food Law. It is not in the nature of criticism so much as in the nature of suggestion. We have got to be on the alert. Any body of men such as that comprising the committee or the board, that has undertaken to formulate rules, will have different views on this subject and the dominant mind in that body is apt to impress itself on the entire body; sometimes it is because of the timidity of the other members of that body. Very often the best minds in any deliberative body are the silent minds, the minds which are so constituted by nature as not to be capable of asserting themselves when they should do so. So that a little careful observation on the part of the medical fraternity of the United States made known to those who are in a position to make it effective, will help us very much. Now, of course, I am very strongly in favor of uniformity in state legislation. But, uniformity in national regulation is just as important. We can direct legislation in a large measure. So far as the gen-

* The complete record of the conference (from which this report is an abstract) has been published in book form and can be obtained on application to the American Medical Association, Bureau of Legislation, 103 Dearborn Avenue, Chicago.

eral government's jurisdiction is concerned, we can control it, and the jurisdiction on the subjects is largely national, because nearly every subject is, by reason of its relation to the people, interstate in character. The manufacture of no article is confined to the limits of one state. In fact, those instances would be so few that they are not worth considering. All medicines are made for interstate trade, and very often for all other states except the one in which they are made. They are very frequently obnoxious to the laws of the state in which they are manufactured; and, in fact, those who are going to manufacture contraband articles generally select a jurisdiction other than that in which they intend to circulate it, so that they can not be charged with selling it against the law in a "concurrent" jurisdiction. That needs to be looked after.

ANTI-NOSTRUM LEGISLATION.

I have always been aggressively against the advertisement of the nostrums that are called "patent medicines." Some time ago a friend of mine, a very old fellow, that I had taken a special interest in, in securing a pension, a man I have known all the years of my life, had reached the age and condition of dependency. I had succeeded in getting him a nice, comfortable pension that would pay his monthly bills for household provisions. Once, when I found that he was very poor, I said to his wife, "What are you doing with your pension?" She said: "Don't you know, Mr. Heyburn, that it takes at least one-half of that pension for 'patent medicine.'" And then she enumerated the "patent medicines" that they were taking. Now, there were these old people, who were paying more than fifteen dollars a month for "patent medicines." So I took the matter in hand with them and also with some of their neighbors and had the matter stopped. They were being imposed on. It was being suggested to them, through advertisements, that they were the victims of ills that they were not troubled with at all, and then that they could find relief through these different medicines. They were thus offered "patent medicines" at one dollar a bottle and fifty cents a bottle, and their house had simply become a depository for those bottles.

Gentlemen, you can not be too aggressive in your opposition to these things. It is not only a question of the health of the people. Many of these nostrums are perfectly harmless to the physical person, but they are not harmless to the pocket-books of the people. So that it is a work of kindness and consideration for the people to bring it down to the closest possible basis.

LEGISLATION AGAINST NEWSPAPERS.

I am also in favor of stopping the advertisement of these nostrums in every paper in the country, and when that matter comes before Congress, I am in favor of restrictive legislation to bar them from the mails of the United States. (Applause.) I think it would be just as legitimate for a newspaper to carry an advertisement saying that we handle the finest line of bombs that can be manufactured; warranted to bring death and destruction in every instance, without fail. I would regard that as just as legitimate as the advertisement of many of these manufacturers, especially those for children and helpless people who have no voice in saying whether they will take them or not, but who must receive them when given to them.

COLD STORAGE LEGISLATION.

On the question of food I have proposed to myself, and have suggested to the press, that I would at the proper time, when I thought it would be effective, introduce a measure for the further inspection of things in cold storage. And I would like to have the careful attention of the medical fraternity to that question, which is one the importance of which has become apparent to me, so far as I can determine those questions, to be one demanding attention.

I have noticed in the exhibition of meats in Chicago, St. Louis, Portland, Oregon, in the big cold storage departments, a condition of affairs, taken in connection with my observation and experience, that seems to demand some further relief. The process of disintegration or the foundation of ptomain poison has been laid in my judgment as well by cold, as by heat, if continued too long. I have seen that yellow, greenish waxy appearance on meat that had been in cold storage three or four years. As soon as you take that meat out, it takes to itself a slimy condition, and it is immediately given a bath of boric acid or something of that kind, to make it fit to handle. The other day I talked with the chef of one of the largest hotels in the United States, and he told me that if the people who ate cold storage fowls could see them before they are prepared they would never eat them. He said that as long as they are kept frozen they were all right, but as soon as they are thawed they take on to themselves this condition, which would generate ptomain poison, if not stopped or checked immediately or in a very short time. I believe that meats in cold storage should be inspected at least every three months. In our examination we found meats that had been in cold storage three years. These people boast of their cold storage plants. We found that it is nothing unusual at all for these cold storage establishments to carry three or four years' supply for their customers.

THE ECONOMIC SIDE OF COLD STORAGE.

There is a side to this question that does not interest you as physicians, but will interest you as citizens. It has enabled these people to dictate the price of cattle, meats and fowls in the United States. They are in position to say: "We do not care whether we buy your goods or your steers this year or next. Take them home and feed them and go broke on it." As a business proposition it results in a corner in those products. You feel it in your household, physicians though you are. You come just as close to those questions in the ordinary walks of life as the rest of us. I would like your investigation of that question. When you have investigated it, you can assist very much those who have to deal with this question through legislation, in giving us the benefit of your views. I may be wrong in my opinion. I am not scientifically educated along those lines, but merely an observer. I have seen that meat that has been in cold storage from two to four years sent out to our camps on the frontier, and I have seen whole camps prostrated in a night. I have seen men die, or I have known men to die in very large numbers as a result of ptomain poison from cold storage meat that had been kept in storage so long that a process of disintegration, or, rather, the foundation had been laid by this protracted freezing process, for ptomain poisoning.

Now, in regard to uniformity of state legislation on the Pure Food Law, there could be no higher purpose served by you gentlemen, representing as you do one of the most magnificent organizations in the world, the physicians of a great country like this. And you can send your views out of here into every corner of the country, so that it will be potent in its influence. The legislatures are few in number, comparatively. Many of the states already have very excellent laws, and there is a considerable degree of uniformity on certain subjects. It merely needs the balancing hand to be put on them, and the suggestion should and could best come from your profession. Men who sit in the legislatures, as a rule, are not technically equipped to deal with this subject. Do not give them a general declaration. Tell them how to make your views on the subject effective. You have a legislative committee. Prepare a measure that shall meet with the approval of the medical fraternity as represented by your organizations, and send that to the health officer of every state, send it to the officers of the legislatures, whether it be the speakers of the respective houses or the chairman of the judiciary committee. And now is the time for you to do it. The legislatures are filled with ambitious men willing to take up this question for you. When I want matters brought to the consideration of legislative bodies, I do not hesitate to take a list of all of them, and send them a personal letter, every man in the legislature. Not a stereotyped letter, not something with a printed signature on it. Send them a letter which will give them the impression, and correctly so, that you regard them as being in a position to take a leading part in these matters. You will find a very ready response. They will become either your supporters, or your opponents, and in either event, the subject will receive consideration. (Applause.)

Of course, I do not know what consideration has been given to this subject. I am just here on my feet on the spur of the moment to make these few suggestions; and I shall be very glad if I may know further of your consideration and your action in these matters, because the subject is one that interests me intensely. The people are enforcing the Pure Food Law. You are doubtless aware of that. Every dealer to-day inquires of his wholesaler or his jobbing house whether or not the goods offered him will stand the test under the Pure Food Law. I know a large dealer who, the other day, declined to purchase buckwheat meal from the people from whom he had been buying it for twenty years, simply because the man wanted him to take a verbal agreement instead of a written one. He said: "If you will give me your guarantee, you may send me two tons of it now, but I want the guarantee in writing." And the other man said: "We never give guarantees in writing, but our firm is a firm of high repute, and we will give you our personal guarantee." Then the prospective purchaser said: "I will not order the buckwheat meal." Druggists tell me that they are censoring every article that goes on to their shelves, because they do not propose to be found with a lot of

contraband articles on their shelves when the Pure Food Law goes into effect. Our merchants are clearing their shelves of articles that will be contraband under the Pure Food Law on the first day of January, and of course the state laws are all supplementing national legislation and will continue to do it. The states are anxious to do it.

The difficulty with the enactment of the Pure Food Law was not in getting votes for it, when it came to a vote; it was in bringing it to a vote. There never was a time when that bill was in danger of being defeated through lack of votes, because a man would find some difficulty in giving a reason why he should vote against a measure of that kind. He might object to it on the grounds of unconstitutionality, if he were a strict constructionist, or one of those people who think that the constitution was meant to cramp and retard instead of assist; but when it came to a vote there were very few men that had the temerity to stand up there and say that we are in favor of dishonest tradesmen having the right to foist these fake articles on the people of this country, who have neither the opportunity, time or ability to discriminate between that which is harmful and that which is not.

I thank you gentlemen very much for the opportunity of appearing before you this morning and I shall be deeply interested in your future work in these matters.

DR. C. Z. AUD, of Kentucky: Gentlemen, let us by a rising vote, thank the Senator for the interesting and helpful address which he has delivered this morning.

The motion was duly seconded, formally put, and unanimously carried.

THE CHAIRMAN: If the Senator discusses this question so thoroughly in the short notice he had, I wonder what kind of a speech he would have made if he had had more notice. We certainly feel grateful to him.

We are fortunate in having a report on this question of the discrepancies in these state laws by Dr. von Mansfelde, who will present the report at this time.

DR. A. S. VON MANSFELDE, of Nebraska: Mr. Chairman, I think nothing could be more fortunate for Senator Heyburn than to have made the speech he has made and have the actual realization of his desires presented to this Council five minutes later. Your Committee on Pure Foods and Pure Drugs begs leave to report as follows:

A few weeks ago I received the following instructions from our chairman, Dr. Reed:

> You are requested as chairman of the Committee on Pure Foods and Drugs, appointed by the National Legislative Council, to prepare a report on discrepancies in state laws relating to the Pure Foods and Drugs. It is our expectation to take up the subject of standardizing state laws on this and other subjects, as a necessary supplement to recent national legislation. It is, therefore, important to have the facts before us so that we may know in just what particulars state laws fall short of the desired remedy. I am aware that this is rather a large task to be discharged in the next two or three weeks, as we desire to meet in Washington on December 14, when we expect to have Senator Heyburn and a few other prominent men in public life, to address us on this particular subject.
>
> I fancy it will be almost impossible for you without collating practically all of the laws of the different states of the Union to present this subject exhaustively. As nearly as I can understand, however, the essential points of discrepancy relate to definition of the words "drugs" and "foods" and the specifications as to what comprise adulteration and misbranding. If you would spend a day at the Law Library of Lincoln, writing in advance to have the clerk get out the statutes of the different states for you, I fancy you could make comparative statements of these two particulars as they relate, at least, to all of the leading states of the Union.

To which we beg to say:

That we happily have in our possession an epitome of the legislation in all the states on drugs and foods, the work of the great Bureau of Chemistry of the Department of Agriculture, and especially the work, through the incentive of its chief, Dr. H. W. Wiley, by Dr. W. D. Bigelow, chief of the Division of Foods, and Dr. Lyman F. Kebler and Earl T. Ragan, of the Division of Drugs.

We find that it would be a work of months to fulfill the demand of the chairman on our committee, but we recommend that a committee of this Council prepare at as early a moment as possible a standardized bill, a pattern bill, to be used as the profession may wish in shaping legislation of the different states on this subject.

Very respectfully submitted.

A. S. VON MANSFELDE, M.D., Chairman.
SILAS D. PRESBREY, M.D.

DR. A. S. VON MANSFELDE, of Nebraska: Mr. Chairman, I move the adoption of the report as read.

The motion was duly seconded, formally put, and carried.

THE CHAIRMAN: The adoption of this report involves the recommendation for the codification of these various discrepancies, and, of course, their publication in THE JOURNAL as an appendix to the published proceedings of this section of the Council.

DR. A. S. VON MANSFELDE, of Nebraska: Mr. Chairman, I was very strongly struck by the Senator's remarks in regard to taking care of "patent medicines," and this Council is familiar with a phase of the subject which appeared before us at the last session of our Council in which a law was presented by Mr. Bok, the editor of the *Ladies Home Journal*, in which he addressed us in rather euphonious terms. It was my pleasure to say that I proposed to go home and to get that law revised, and I have been at it since then. I hold in my hand a law, or rather a bill for an act which it was my humble privilege to write, which is to be introduced after the holidays in the legislature of Nebraska, already consented to by all the profession in Nebraska. Subsequent to the correspondence with the Chairman of the Council, Mr. Senator, the matter was brought to the attention of the people of the country by a bill that Mr. Bok suggested in the *Ladies Home Journal*, and I took the pains to take that as a basis for a section of my bill that is to be introduced into the legislature of Nebraska, and I would like very much to know whether you approve of the measure or not:

> Section XV. Any and all mixtures and compounds, which may now, or from time to time be known as articles of food or medicine for a man or other animals, other than a medicine specially compounded on the written order or prescription of a physician, duly authorized to practice his profession in this state, which shall be hereafter manufactured in this state, or which shall be hereafter manufactured without this state and exposed or offered for sale, or sold or given away, or otherwise disposed of within this state, shall have printed upon the container thereof, in black letters upon white paper, of a size not smaller than of type eight point, so called, a complete schedule showing all the ingredients contained in such mixture or compound of food or drugs and the exact proportions of each ingredient thereof, without disclosing the methods of manufacture.
>
> All such mixtures and compounds of foods and drugs, if they contain any one, or more of the substances, or their derivatives, enumerated in section 13 of this Act, then and under such conditions, there shall be printed in plain English in red letters of a size not smaller than eight point, so called, on white paper in addition to the schedule of ingredients hereinbefore required, both on the outside wrapper of the package, bottle, box, or other parcel, containing the same and also on the label affixed to such package, bottle, box, or parcel, a notice reading as follows:
>
> This package (or bottle, or box, or parcel as the case may be) contains (here give the name and proportion or percentage of the drug as the case may be) and is therefore under the Act of the Legislature of the State of Nebraska marked
>
> POISON.
>
> and also the single separate word Poison, which shall be printed separately, on a line by itself in bold fair type, and in letters not less than one-quarter of an inch high.
>
> Any person, firm, or corporation who shall manufacture or expose, or offer for sale, or sell or give away, or otherwise dispose of any such compounds or mixtures of food or drugs, the latter generally known by the trade names of proprietary or patent medicines, without complying in every detail with the provision of this section of this Act shall be guilty of a misdemeanor and for such first offense shall be fined not more than one hundred dollars ($100.00) and upon conviction for each subsequent offense not exceeding two hundred ($200.00) or imprisonment in the county jail of not more than one year, or by both such fine and imprisonment in the discretion of the court, and the convicted defendant shall be liable for all the costs of the action.

I will say for the information of the Council and also for the information of the Senator that I have enumerated the drugs mentioned in the Pure Food Law, but I have also taken the liberty to add the derivatives of the coal tar preparations or other abortifacients, and have named them.

I want to say that this is not my own emanation. It is a combination of the Pure Food Law of the United States, the bill that Mr. Bok so kindly furnished us, and suggestions of Dr. Bigelow on the subject. The bill certainly seems to be very comprehensive, and although it is new, it is still germane to the subject and it is one we might very well take under consideration. Perhaps Senator Heyburn will favor us with a few remarks on the question.

SENATOR W. B. HEYBURN, of Idaho: The questions are too technical for a non-professional person like myself to express before a body of men comprised as this is, himself on the spur of the moment, expressing definite ideas, at least. I know practically nothing outside of the most general rules of chemistry as to the effect or desirability of these combinations, so it would be useless for me to attempt to say anything that might be useful to you on it. I take it for granted that those of the profession who know the nature, character and effect of these substitutions, singly or in combination, are entirely capable of determining when and where they may be safely ad-

ministered. The question of notice, it seems to me, is quite sufficient. Of course, there are some combinations that people should not be allowed to sell, even though they are marked poison. There are some enumerated in that bill that should not be sold at all to any person. They should be administered or taken, if at all, under the direct supervision of a competent medical man, who would know how and when to administer them. So that a layman, such as myself, would have no opinion that would be useful to you on that subject. I want to say that I did not express myself as fully as I felt. I want to express my appreciation, and the appreciation of those who enacted the Pure Food legislation of the inestimable services of the medical profession, and especially of your Chairman, acting for you (Applause), in helping to shape that legislation to an intelligent purpose and make it practicable, and while I have written him my personal appreciation of it, and expressed it through him to the profession at large and to your organization in particular, yet I desire on this occasion especially to say that there was nothing that helped us to the extent of the aid given by the medical profession and by your organization, and by your Chairman. It crystallized the general knowledge that the layman has on this subject. We stand ready when this bill is found defective in any respect to take up your suggestions and give them our attention.

I thank you again, and wish you a pleasant and profitable session.

Revised Packing Laws.

DR. H. R. BURTON, of Delaware: There is a matter that will probably come before Congress during this session, and I would like to hear some expression of views from the members of this Council, and that is a law compelling packers to label the date of packing on their canned goods, especially canned meats. Now it has always been my opinion that canned goods, if they were pure and wholesome three months after they were put in the package, that they would be good for three years or for ten years, if the package remained intact. Dr. Wiley, as I understand, claims that after three years, or after a certain time, I will not say what time, they become dangerous and inferior, or maybe it is after a certain number of months. I have forgotten what the time was. I would like to know what would be the views of some of the members of this Council as to the advisability of compelling packers, especially packers of meats, to put the date of packing on their goods.

After a further informal discussion of the osteopathic bill, during which remarks were made by Drs. Aud (Ky.), Samuels (Pa.), Acker (D. C.), Van Meter (Colo.), Rodman (Pa.), Halsey (N. J.), Welch (Md.), Percy (Ill.), Fulton (D. C.), the Chairman called for

Report of the Special Committee on the Bill for the Relief of Dr. James Carroll.

DR. A. S. VON MANSFELDE:

WHEREAS, The Chairman of this Council in his address to this body uses this language:

> The ultimate completion of the Panama Canal, the present salubrity of Cuba, the safety of our Southern seaboard against periodic invasion by epidemics, the maintenance of life and health by our citizens in that great section; and the stability of our national commerce against disturbance from the same cause, are all made possible by the discovery that the mosquito is the carrier of the contagion of yellow fever. That fact was established by the labors of three men, two of whom in the interests of humanity and science subjected themselves to inoculation by infected mosquitoes. As a result of that experiment, one of them, Dr. Jesse W. Lazear, within the next few days, died a martyr's death, the other, Dr. James Carroll, survived to live a martyr's life. The only reward that he has so far received is a disease of the heart that occurred as the result of the yellow fever, that he voluntarily contracted for the welfare of his race. This man, this hero, after risking his life to give this priceless boon to the world after incurring a permanent invalidism in that cause, after having spent thirty-four years in the faithful service of his country, is permitted to remain only as assistant surgeon with the rank of First Lieutenant in the U. S. Army, with the paltry salary of an officer of this grade and with broken health this man, far past the meridian of life, is supposed to meet the obligations resting upon a husband, the father of seven children and to provide against the requirements of old age. A bill for his relief, endorsed by this Council at its last conference was introduced in the Senate but has never been reported out of committee. This is a shame. Surely if Congress understood the facts of this case the bill would pass within an hour by concurrent action of both houses. To permit it longer to slumber will be to bring the blush of humiliation to the cheek of every intelligent and grateful citizen of the Republic.

The special committee appointed by resolution of Dr. A. S. von Mansfelde to pass on said remarks of the Chairman, do most emphatically approve same and recommend that this Council as a representative body of the medical profession of America, urge on the President and Congress to make such investigation and take such action as will mete out a full measure of justice to Drs. James Carroll and Jesse Lazear and their families.

Further, that the medical members of Congress be respectfully requested to use their utmost power to accomplish this end.

A. S. v. MANSFELDE, Chairman.
C. Z. AUD.
S. D. VAN METER.

A motion was duly offered to accept the report, which being seconded, was formally put and carried.

Standard Bill for the Regulation of Pure Food and Drugs in the States.

The Conference resolved itself into a committee of the whole (Dr. von Mansfelde in the chair) on the regulation of foods and drugs in the states. After a thorough discussion of the measure, submitted respectively from Nebraska and Colorado, the committee of the whole was adjourned to meet at 4 o'clock p. m. the same day, and the Council resumed its session with Dr. Reed in the chair.

Sanitary Aspect of the Immigration Question.

THE CHAIRMAN: Gentlemen, I wish to say that in arranging the program for this evening I invited the Commissioner-General of Immigration to be with us and present some views with reference to the requirements of that service, as to additional legislation. I find that the Commissioner is absent. I have received the following letter, however, from the Commissioner's office, as follows:

> "Your letter of the 8th instant, addressed to Commissioner-General Sargent, has only just been received at this Bureau. Mr. Sargent is now on the ocean between Honolulu and San Francisco, enroute to Washington, and will not reach here until about December 23d.
>
> "It so happens, however, that Dr. George W. Stoner, Surgeon in the Public Health and Marine-Hospital Service, who has charge of the medical division at the Ellis Island Immigration Station, is in the city, and I have arranged to have him attend your conference to-morrow.
>
> "Dr. Stoner is thoroughly posted upon all features relating to the medical inspection of aliens, both at the places of entry into this country and at the foreign ports of embarkation. He will be pleased to address your conference on this subject, should you care to have him do so."

Dr. Stoner is here and I take great pleasure in introducing him to you. He will make a few remarks.

DR. G. W. STONER: Mr. Chairman and members of the Council: I need not say in the beginning that I have been called on very unexpectedly. Had I known that I was to be in Washington and in attendance at this meeting I should have been most happy to have made some little preparation, but your chairman has kindly suggested that all I need to say is to invite attention to what is now pending before Congress. I may say, therefore, that there are various immigration laws which have been passed from time to time. The last, or the latest one, being that of March 3, 1903. This is, in many respects, a very comprehensive law as many of you may know. It even goes so far as to say that no intoxicating liquors of any kind shall be sold at any United States immigrant station and that no intoxicating liquors of any character shall be sold within the limits of the Capitol Building of the United States. Strange as it may seem, the immigration law contains that paragraph. I understand it was put in somewhat humorously by the House, expecting that of course the Senate would strike it out, but the Senate seemed to have forgotten to do so and there it stands.

If you are interested in these matters I would be glad to read this bill to you. The question of immigration is such a large one that it is hard to determine just what to talk about, but I happen to have a paper which I prepared not long ago for the consideration of the New York Academy of Medicine, having reference to our method of conducting examinations at Ellis Island. In this paper I called attention to some of the sections of the law to which I have just referred.

Under Section 1 there is levied a head tax or "duty" of $2.00 for each and every passenger not a citizen of the United States or the Dominion of Canada, the Republic of Cuba or the Republic of Mexico, who shall come by steam, sail or other vessel from any foreign port to any port within the United States, or by any railway or by any other mode of transportation from foreign contiguous territory to the United States. The money thus collected shall be paid into the United States treasury and will constitute a permanent appropriation to be called the "Immigrant Fund," to be used to defray the immigration of aliens into the United States.

Section 2, directing exclusion of "all idiots, insane persons, epileptics, and persons who have been insane within five years previous, persons who have had two or more attacks of in-

sanity at any time previously; persons afflicted with a loathsome or a contagious disease." In explanation of the law I may say that the diseases classed as dangerous and contagious are either those of trachoma, and fibrous diseases of the scalp, and some forms of ringworms as well.

Section 8 imposes heavy fines ($1,000) or imprisonment against any person bringing into or attempting to land in the United States any alien not duly admitted by an immigrant inspector or not lawfully entitled to enter the United States; and Section 9 provides that there shall be paid to the collector of customs $100 for each and every alien afflicted with a loathsome or dangerous contagious disease, if it shall appear to the Secretary of Commerce and Labor that the existence of such disease might have been detected by a competent medical examination at the time of barring embarkation; and no vessel shall be granted clearance papers while such fine imposed on it remains unpaid.

I might say, in connection with this paragraph that during the last year, as nearly as I can remember, there was some $20,000 to $30,000 imposed in fines, chiefly for bringing in trachomatic aliens, cases that might have been recognized on the other side. There are many cases of trachoma and we find it very hard to certify to whether the disease was contracted on board ship or had evidently been of long duration, and it places us in a very hard position to say that the disease might have been detected by competent medical examination on the other side, for the reason that the disease lies in a dormant state, or is believed to be cured. Indeed they sometimes present certificates from eminent men on the other side of the water which declares them free from trachoma or other dangerous disease, but nevertheless, we find them on arrival with the disease in the most dangerous form.

Sections 20 and 21 provide among other things that any alien who shall come into the United States in violation of law, or who shall be found a public charge therein, from causes existing prior to landing shall be deported to the country whence he came at any time within two years (and under certain conditions within three years) after arrival, at the expense of person bringing alien to the United States, or, under certain other conditions at the expense of the immigrant fund.

Now I might say in regard to that section that a great number of cases are returned each year by different state authorities, chiefly by New York State, as so many settle right around there and near at hand, and find their way into the public institutions. On the other hand, a certain number become insane, and then return, or at least their names are returned, and if the landing can be certified, warrants are obtained at the department, an arrest is made and the patient brought back to Ellis Island and put on board ship and deported, provided, of course, in all cases, that the immigrants are able to travel. Now, sometimes they are sent back after a residence of two years, sometimes after a residence of six months. We have had immigrants returned when the interval was not more than two or three months. For this reason reflection has sometimes been made that we have not been observant in our medical examinations. However, our investigation shows that the majority of these cases had their first attack after arrival, brought about in many cases by homesickness, hunger, or privations of that kind, acting as an exciting cause. It is easy enough to make a certificate that their condition is due to some remote cause just as otherwise due to causes existing before landing. In a remote sense that might be true of every one, but it is a very different proposition from saying that they had the disease when they landed, and that it might have been detected. Nevertheless, we are continually increasing our facilities for that kind of work. The Surgeon-General has increased the number of medical officers. We have in our corps several men who are quite well posted on mental afflictions, and on questions of insanity, and the Surgeon-General has also made the very wise provision to have several of our officers detailed for special duty in the government hospital for the insane here in Washington, where they receive extraordinary advantages and instructions from the specialists and alienists on duty in that institution.

So that every effort is being made to sift as far as possible the undesirables. I must say, however, that the law is ineffectual inasmuch as it provides a fine against certain classes and yet provides no penalty in regard to idiots, insane persons, epileptics and so on, other than mere deportation, and mere deportation is not sufficient. It is, therefore, important that the bill now pending before Congress, which places under the so-called fine class such afflictions as I have mentioned. I think that is one of the most important features in the pending legislation to-day before Congress in relation to immigration matters.

In relation to the section I have referred to just now, Section 30 provides among other things, "that no intoxicating liquors shall be sold to any United States immigrant station." And Section 30, that no intoxicating liquors of any character shall be sold within the limits of the Capitol Building of the United States. I only draw your attention to this matter to show you the importance immigration matters have before Congress, and all you need to do, and they will, I have no doubt, do what you say.

THE CHAIRMAN: Specifically, what measures are pending?

DR. G. W. STONER: The principal one is the bill to which I just referred, which places in the fine class the cases I have enumerated.

THE CHAIRMAN: Is there anything that this Council of the American Medical Association can do to promote the passage of those measures?

DR. G. W. STONER: Yes, sir.

THE CHAIRMAN: Will you be kind enough to send them to my office; send them to me.

DR. STONER: I shall, with pleasure.

THE CHAIRMAN: If you will send me those measures before I leave Washington, the measure will be put in as part of the proceedings.

DR. WILLIAM H. WELCH: Mr. Chairman, I am very much interested in the matter discussed by Dr. Stoner, and I move that the thanks of this Council be extended to Dr. Stoner for coming here so kindly and giving us this very instructive talk.

The motion was duly seconded, formally put and carried.

DR. STONER: Mr. Chairman, I would also like to express my appreciation of your kindness.

DR. L. M. HALSEY: Mr. Chairman, before we adjourn, in regard to the matter I was talking to you about this morning, I move, as it seems fitting at this time, that the Council of the American Medical Association to take some initiative at the active work of Senator Heyburn in effecting this Pure Food legislation, I move you that a resolution be prepared by the Committee on Resolutions and presented to Senator Heyburn, expressing the appreciation of the members of the American Medical Association for his untiring work in this connection.

The motion was duly seconded, formally put and carried.

Whereon the conference adjourned to 4:30 p. m.

COMMITTEE OF THE WHOLE.

AFTER RECESS—FRIDAY AFTERNOON, 4:30 O'CLOCK P. M.

THE CHAIRMAN: Gentlemen, I think we had better come together as a committee of the whole, and I will ask Dr. S. D. Van Meter, of Colorado, to take the chair during the consideration of this proposed standard bill on the pure food and drug proposition.

Whereon the conference resolved itself into a committee of the whole, Dr. S. D. VanMeter, of Colorado, in the chair.

The various provisions of a proposed standard bill were thereon discussed *seriatum*.

DR. L. M. HALSEY: Mr. Chairman, I heartily agree with your suggestions as to these measures being applicable to all states, and it seems to me the proper plan is to appoint a special committee and provide the printing in THE JOURNAL of a bill which will generally cover the points under contention and which will be the basis or the framework for enlargement and for application to the several states. I make that as a motion.

The motion was duly seconded, formally put and carried.

DR. E. J. LUTZ, of Kansas: Mr. Chairman, owing to the temporary absence of Dr. Reed, I move we now rise as a committee of the whole and make our report to the conference.

The motion was duly seconded, formally put and carried.

DR. A. S. VON MANSFELDE (Chairman *pro tem*): Gentlemen, we will now have the report of the committee of the whole.

DR. S. D. VAN METER: Mr. Chairman, the committee of the whole begs leave to report that it has had under consideration the question of pure-food legislation and the question as to the advisability of appointing a committee and standardizing an act to be taken as a model by the different legislatures throughout the country, and begs leave to report that the committee of the whole feels that the committee on legislation should take this matter up and have their ideas as to the

salient features especially applicable to all the states, have them published as soon as possible, prior to the first of January if possible, and furnish the legislature of each state proper copies throughout the United States.

THE CHAIRMAN *pro tem.*: There is already a motion on record that covers a part of your motion.

DR. S. D. VAN METER: As I understand it, Mr. Chairman, the only thing accomplished in the reading of these bills is proving my prophecy that there is no use at this time to try to standardize a bill. In addition to that motion, I would like to say in the report of the committee of the whole that the committee has had this matter under consideration and wishes to state that they are convinced that further than immediate advice on the salient features which may be decided on by the legislative committee, composed of Drs. Reed, Rodman and Welch, can not be acted on with any sufficient promptness. That is my idea in regard to the proposition, and that they should take up the salient features, especially the enacting clause, the following of the national law, etc., and advise the different states forthwith without waiting for the publication, but have it published as soon as possible.

The motion was duly seconded, formally put and carried.

(At this time Dr. C. A. L. Reed entered and resumed the chair.)

The conference thereon adjourned to visit the Speaker of the House and other members of Congress, as previously determined.

COMMITTEE OF THE WHOLE.

SATURDAY, DECEMBER 15.

The conference assembled in committee of the whole in the room of the House Committee on Pensions, Dr. Charles A. L. Reed in chair.

A formal interview was had with Messrs. Barchfeld, Burton and Samuels, who were informed of the action of the Council in placing various questions in their hands.

The Army Medical Reorganization Bill.

The Council was then received by Hon. J. G. Cannon, Speaker of the House, to whom the Chairman again presented the claims of the Army Medical Reorganization Bill, urging that a rule be issued for its early hearing during the present session. The Speaker was not disposed to favor the measure, but before the conclusion of the interview promised to go over the subject again.

A call on Hon. C. H. Grosvenor (Ohio), member of the House Committee on Rules, resulted in the information that he was in favor of the bill and that the committee was ready to issue a rule just as soon as the Speaker would permit the subject to come up.

A call on the Secretary of War, Mr. Taft, revealed that he was continuing his earnest support of the measure, that he had already spoken with the Speaker in its behalf, and would do so again.

The Bill for the Relief of Dr. James Carroll.

The Council was very cordially received by Senator Warren, Chairman of the Senate Committee on Military Affairs, who manifested an active interest in the measure for the relief of Dr. Carroll. It was arranged that the Committee on Medical Legislation, A. M. A., should present the military record of Dr. Carroll and all necessary memoranda relating to the case immediately after the holiday recess, when Senator Warren would bring the matter up in committee and have it reported to the Senate as soon as possible.

Members of the Council then called individually on their representatives and senators in the interest of the various pending measures.

The committee of the whole reassembled at 6:30 p. m. and reported.

Whereon, at 6:45 p. m., the Annual Conference of the Committee on Medical Legislation and the National Legislative Council of the American Medical Association was declared adjourned by the chairman.

Approved: J. F. PERCY, Secretary.

CHARLES A. L. REED, Chairman.

Section Discussions

CONGENITAL HIP DISLOCATION.

(*Continued from page 284.*)

DISCUSSION.

DR. E. H. BRADFORD, Boston, said that Dr. Mueller's explanation of the twist of the neck of the femur was very carefully studied some years ago by Professor Nichols and Dr. Soutter, and it was at that time regarded of such importance that it seemed as if it were necessary to perform osteotomy of the neck to correct it, but fortunately subsequent experience showed that this is rarely needed. The after position Dr. Mueller mentions has been tried a number of times at the Children's Hospital in Boston, with, in many cases, marked success, but Dr. Bradford thinks that Dr. Mueller's statement that it is successful in 100 per cent. of cases is hardly justified from a pathologic reason. With regard to the permanency of the cure of congenital dislocation of the hip by manipulative methods, there can now be no possible doubts. Dr. Mueller's claim that 50 per cent. of the cases are cured by the manipulative method can be substantiated by the experience of several clinics; but there remain 50 per cent. that are not cured, and in many of these cases the result has not been a cure even when fixed in a position in after treatment similar to that described by Dr. Mueller. If the anatomy of the hip joint is studied it will be seen that the chief factor in children in holding the head of the femur in place is the cotyloid ligament, a fibro-cartilaginous ligament. There is also an orbicular ligament which aids in holding the head of the bone in place. In congenital dislocation the capsule is stretched and the cotyloid and orbicular ligaments are also stretched. Under certain conditions there is in resistant cases a contraction of the capsule near the acetabulum so that it is much smaller than the dislocated head. When the dislocation is reduced under these circumstances, a tough cartilaginous fold has pushed in front of the head. This may be largely fatty tissue, but in certain cases it is not fat but fibro-cartilage. This tissue may be absorbed under pressure; but if the tissue is fibrous, it is not probable that it will be absorbed. In the old operation of incision it was thought necessary to deepen the acetabulum destroying the capsule. In the past year at the Boston Children's Hospital attempts have been made to utilize the flaps of the capsule after cutting the constricted portion of the capsule to hold the reduced head in place, making in this way a new orbicular zone.

The disadvantages of the operation of incision, Dr. Bradford said, are considerable. There is the risk of sepsis. Though deaths from sepsis are, as a rule, preventable, there is always a risk involved. There is probably slightly greater danger of stiffness after incision than after manipulation. These dangers, may, however, be diminished by care and improved skill, but at present it appears that the operation of choice in ordinary cases of congenital dislocation of the hip is the manipulative method. He thinks that the position referred to by Dr. Mueller after manipulative reduction is probably much more reliable in preventing relapse than the position formerly in general use.

DR. VIRGIL P. GIBNEY, New York, stated that the question all are considering is whether the bloodless method is going to supersede the bloody method, and he thinks that surgeons have about come to a conclusion. During the past two or three months he has tried to find the records of some 58 cases that have been operated on since 1900. He thought that he had secured the end results of that number, but in boiling them down he found that he could get only about 43 out of the whole number that were worth reporting. For instance, somewhere the report was made six or eight months after operation, where there was a difference of opinion as to whether the head of the bone was anatomically perfect. Roentgen ray pictures showed the everlasting twist of the neck, a rudimentary position, and sometimes he could feel in the gluteal region a little body which later became more prominent. So he ruled out every case of which he was not absolutely sure. He thought that the demonstration by Dr. Bradford was very convincing. If surgeons can not avoid

sepsis they ought to be content to adopt the bloodless method. Of the 43 cases that he succeeded in analyzing, there were eight anatomic cures, making about 18.5 per cent. There were two functional cures, 4.5 per cent.; or combining the anatomic and the functional cures, and many anatomic cures are functional cures, there are ten cases out of 43, a percentage of 23 1/5. Seventeen patients were improved, or 39.5 per cent.; that is, the anterior reposition or the subspinous reposition, as it is sometimes called, but a very good functional result with the abolition of that lordosis which is so common in congenital dislocation of the hip. The ease with which these patients can walk long distances is remarkable. Fourteen patients were unimproved, or 32.5 per cent. There was one doubtful case and one patient died of the bloodless operation. There was one open operation which was a failure, and that was followed by the bloodless operation, which was a partial success. There were five bloodless failures, followed by the open method, which were all improved, and there were two of the Lorenz failures that were cured by operation.

DR. A. H. FREIBERG, Cincinnati, said that he was under the impression that the conditions with reference to twist of the femoral neck in these cases of congenital dislocation of the hip joint referred to by Dr. Mueller are identical with those described by Schede some years ago, and that the principle involved in this primary reposition referred to in the paper is practically identical with the method proposed by Schede at that time, with the exception of the osteotomy of the femur.

DR. F. MUELLER, Chicago, said that although the malformation and the filling out of the socket with fibrocartilage or fat is known as being present in almost any case of congenital hip dislocation, he cannot agree with Dr. Bradford's explanation that the remodeling of the socket cannot be expected because fibrous cartilage is not resorbed by pressure. In applying the Lorenz method one does not depend on the resorption of this layer of cartilage, but only on the remodeling of the underlying bony tissue for which the "functional adaptation and transformation" holds good (J. Wolff. law of transformation).

As to Dr. Freiberg's remarks, he said that Schede was one of the first to call attention to the fact that this twisting of the neck of the femur is present in about 50 per cent. of all cases, and he therefore advocated a medium abduction and inward rotation of the thigh. But Dr. Mueller's position is neither identical with Schede's position nor is it inward rotation at all, because if it would be then the patella could not be in or nearly in the frontal plane. His position is a neutral rectangular one obtained by abducting the thigh about 90 degrees. It is also different from Lange's, which is a medium abduction and intro-rotation very similar to Schede's position.

VARIATIONS IN THE FRONTAL SINUSES.

(*Continued from page 289.*)

DISCUSSION.

DR. L. D. COFFIN, New York City, said that Dr. Cryer exhibited one picture which showed an anterior ethmoid cell which looked as if it had been shoved up into the frontal sinus. In a dissection Dr. Coffin had an extreme example of this kind in which the ethmoidal cell on one side nearly filled a large frontal sinus, and on the other side the frontal sinus was completely filled by an ethmoidal cell. One could simply make out that a layer of frontal bone covered the bony wall of an ethmoid cell. It was an opportune find for him at that time as he was studying the development of the frontal sinus, and found that the most commonly accepted theory is that the frontal sinus is the result of the prolongation of the ethmoidal cell into the frontal bone. Dr. Coffin does not think that the development of the frontal sinus should be explained in this way. If it were so developed, it would seem as though one should always recognize the point at which he has passed through the frontal bone, and at that point one would expect to find and to recognize the bony covering of the ethmoid cell, as part of the ethmoid bone. Why, he asked, should the frontal sinus not be developed by the same physiologic process as accounts for the other bony sinuses, viz., the action of the osteoblasts and the osteoclasts.

These cases show how easily in operating for frontal sinus disease one might open an ethmoid cell in the frontal region, clean it out, and close the wound without ever having been in the frontal sinus at all. One gets a proper appreciation of the development of the sinuses when he considers the size of one of these large ethmoidal cells which are found in the frontal region as compared with the diameter of the infundibulum through which it pushed its way into the frontal sinus; that is, he appreciates better the action of the osteoblasts and the osteoclasts. Dr. Cryer's specimen showing such extensive air spaces, is very interesting. Dr. Cryer had opened into it through the floor of the brain and from the greater wing of the sphenoid, and again away out at the external wing of the eye, and it seems as if it would be almost impossible to operate satisfactorily on it. Had Dr. Cryer done a typical Killian operation, however, the case might have presented fewer difficulties than would appear from the specimen as presented.

DR. F. S. SNOW, Syracuse, N. Y., said that Dr. Cryer has shown anatomic facts which can be applied with value. These cases must be approached with a good deal of caution, but there should be no timidity in cases of emergency. Some conditions call for operative work and will admit of no other treatment; even if a sinus is 44 mm. deep it is the operator's duty to uncover that sinus and to secure drainage. A patient should not be subjected to the radical operation who has a fair chance of comfort and life by enlargment of the nasofrontal duct. After fifteen years' experience with these chronic cases Dr. Snow's attitude is a conservative one. While it must be admitted that acute symptoms sometimes supervene and better drainage must be secured than can possibly be obtained through the nasofrontal duct, still the fact remains that in the majority of cases this duct is large enough to give fairly comfortable conditions.

DR. GEORGE E. SHAMBAUGH said that any one who makes a study of the frontal sinus on the cadaver must be impressed at once with the very great variations in the shape as well as in the size of this sinus. So far as his observations go the frontal sinus varies more in its size than any of the other nasal accessory sinuses. In his collection there are five adult heads in which no frontal sinus is found on either side. He has several in which a moderate sized sinus exists on one side and none at all on the opposite side. The enormous size which a frontal sinus may attain is equally surprising. He has one preparation in which the frontal sinus extends 4.6 cm. from its anterior wall back over the roof of the orbit; from the median line following the rim of the orbit it measures 7.2 cm., while it extends upward over the forehead 5.5 cm. The cavity formed by the two frontal sinuses in this instance is enormous and should such a patient be operated on by one of the obliterating methods a most unpleasant deformity could not be avoided. Dr. Cryer has shown some illustrations in which he speaks of the presence of three or more distinct frontal sinuses. Dr. Shambaugh does not think these should all be called frontal sinuses. Developmentally the frontal sinuses are of course originally ethmoid cells, that is they are cells that originate in the ethmoid between the unciform plate and the plate of the bulla. They are considered ethmoid cells until they have pushed their way up between the two plates of the frontal bone when the term frontal sinus can be justly applied. It is a very common occurrence for other ethmoid cells to grow upward into the frontal sinus. Such cells are called frontal ethmoid cells and although they have separate passages leading to the nasal chambers they should not be considered as independent frontal sinuses. The term frontal sinus should be reserved for the two having their outlets between the unciform plate and the bulla, i. e., in the anterior end of the infundibulum. Dr Shambaugh said that sinusitis is a misformed term and should be dropped for the correct word sinuitis, which is formed by adding the suffix *itis* to the noun stem *sinu*, just as the word iritis is formed instead of irisitis. The term sinuitis is the

correct one and is the one used by writers who have an appreciation of language. Dr. Shambaugh emphasized the practical bearing which the enormous variation in the size of the frontal sinus has when the question is being considered of relieving a frontal sinuitis by an intranasal operation or by removing the outer wall. This certainly should be a strong factor in favor of a conservative intranasal operation when such will suffice, as it usually will.

DR. H. P. MOSHER, Boston, said that the frontal sinus is undoubtedly an anterior ethmoidal cell. The highest one, the one that pushes apart the two plates of the frontal bone, is called the frontal sinus. Dr. Mosher has specimens of ethmoid cells projecting into the frontal sinus large enough to give a wall which could be recognized at operation at the Harvard Medical School.

DR. ROBERT C. MYLES, New York City, said that about 10 years ago he operated on hundreds of cadavers. He investigated the ethmoidal cells and frontal sinuses and found a great many specimens such as Dr. Cryer has shown. Dr. Myles has operated on series of both by the internal and external methods. As time goes on and he compares experiences in the different procedures, he attributes increased value to one cardinal principle, and that is providing drainage from the recesses above the orbit and in the frontal bone through the natural channel, which is through the ethmoidal cells. Sufficient progress has not been made to do these operations perfectly, such as cutting away the ethmoidal cells and the floor of the frontal sinus, without causing occasional injury to the patient. Logan Turner collected the histories of 24 deaths from the external operation, and there are very few from the internal. The natural tendency in the future in treating these large recesses above the eye and frontal sinus will be through the nose, and it rests with some one to devise a method of removing these cells without injuring the orbit and the cribriform plate. When Dr. Myles has succeeded in cutting a large hole in the floor of the frontal sinus, the patients usually make a more rapid recovery. A small frontal sinus is easily obliterated by an external operation, but a large one presents many difficulties. He reported a case in which he removed 7¾ square inches of bone—the anterior walls of the frontal sinuses—from a man's forehead, and got union by first intention over two-thirds of the area; the man recovered completely. Of course, there was deformity, but that can be alleviated a great deal by the different paraffin methods. Whenever drainage and ventilation through the nose can be established every possible measure for improvement in that direction should be instituted.

SYMPTOMS OF TUMORS OF THE PREFRONTAL LOBES OF THE BRAIN.

(*Continued from page 295.*)

DISCUSSION.

DR. P. C. KNAPP, Boston, said that from Dr. Krauss' description of the specimen exhibited, it would seem as if the growth was not distinctly confined to the prefrontal region, but was invading the ascending frontal convolution. Dr. Knapp declared that he can hardly subscribe to the theory that would localize the higher intellectual processes so definitely in the left prefrontal region. He thinks that the intellectual functions of the brain are too complex and too varied and involve too many different and distinct regions of the brain to warrant us in making such a definite localization. His study of the mental disturbances in tumors of the brain show that the only case in his collection in which there was no pronounced mental disturbances of all the cases of tumors in the prosencephalon, was in the case of a large tumor involving the left prefrontal lobe and extending backward. The explanation was comparatively simple. It was one of those cases of tumor with intense headache, so that the patient on account of the pain objected to any questioning, and it was deemed unwise to go into any extended examination in regard to the mental function. There is certainly an increasing amount of evidence that the temporal lobe plays an important part in the intellectual faculties. Any disturbance in the speech zone will generally show itself in the disturbance of the mental faculties, either in the processes of comprehension or in the expression of ideas. Furthermore the intellectual faculties are not dependent entirely on the cortical processes, but on the proper functioning of the great association tracts as is shown by the fact that in tumors of the corpus callosum the mental disturbances constitute an early and marked symptom.

DR. FRANK R. FRY, St. Louis, Mo., said that he recently noticed a convenient and expressive phrase to use when discussing this matter of cerebral localization; namely, "the center for the control" of stereognosis, speech, etc., the idea being that there is no one center for speech, one center for writing, one center for stereognosis, etc., but that there is an area where the various perceptions and conceptions involved in these several functions are collected or collated for expression. Some years ago he noticed that an English writer in speaking of Broca's convolution called it "the way out of language." He meant that there is a definite place where the various concepts entering into language must be collected before they can find expression in speech and in writing. Last year Dr. Fry reported to the American Neurological Association a case of a large tumor involving the posterior portion of the third frontal convolution and the operculum of the left side. There was no disturbance of speech and but very little mental disturbance. The patient was left-handed.

DR. H. A. TOMLINSON, St. Peter, Minn., said that for some years he has been studying the conformation of the convolutions of the brain in demented persons; comparing the changes found in the convolutions with the evidence furnished by the life history of the individual. While he has found considerable variation between different brains, the changes follow a definite order, and these observations confirm the conclusions of Dr. Mills concerning the part of the brain involved in intellectual functioning. The atrophic changes that result in dimpling, usually begin in the frontal convolutions anterior to the precentral sulcus. As the dementia progresses the atrophy extends to the convolutions of the operculum, the first and second temporal convolutions, the angular gyrus, the upper part of the superior parietal lobule, and to the mesial border of the paracentral lobule. These secondary changes in the special sense areas, and the associated areas for muscular expression, are always involved in proportion to the degree of dementia. Dr. Tomlinson believes that the intellectual disturbance and dementia associated with the presence of tumor in the brain are the result of the interference with association between the different special sense areas, and that this faulty association is the main factor in producing the mental changes referred to by Dr. Knapp.

DR. CHARLES K. MILLS, Philadelphia, believes that in the strictly prefrontal portion of the cerebrum, and especially in the left hemisphere, are located the higher psychical functions. Not long since, in conjunction with Dr. Weisenburg, at the 1905 session of the Association, he reported a case of tumor of the frontal region which seemed to carry out these views. Of course such views must be based on a much larger study than that of neoplasms and other destructive lesions of the prefrontal lobe. The conclusions must be drawn from studies in anatomy, morphology and comparative physiology. There may be mental symptoms from lesions differently situated or from diffused lesions, and this is exactly what should be expected. The tumor, if it is one that produces pain and great cerebral irritation, will cause mental phenomena which are the results of that irritation, just as any sort of painful lesion in any part of the body will produce psychic symptoms. The irritation may excite or exhaust the patient or prevent him from fixing his attention, and symptoms of this sort are supposed to disprove the idea of special psychic regions of the brain. This, however, is not correct reasoning. Injury or disease of the posterior association area of the brain, the region of the brain concerned with concrete memories, will give mental symptoms of a special kind, but ones which can be separated from those caused by lesions in any other part of the brain. An injury to the higher region

will include the lower in its symptomatology, but the lower will not include the higher.

DR. W. C. KRAUSS, Buffalo, said that some British physicians contend that the occipital lobes are the center of the higher intellectual faculties, and, as Dr. Knapp claims the temporal lobe is also thought by many to be the proper seat of the higher faculties. The tendency among psychiatrists, however, has been to consider the prefrontal lobe not as the seat of the mind, but as the seat of the higher psychical functions. The mind must be considered as the sum of all the attributes and functions of the brain and the pathology of the mind must be that of general cortex disease. In paresis, the only mental disease in which there is definite pathology, the lesion is almost always found in the prefrontal lobes, and of late the examination of these patients has revealed the fact that the left prefrontal lobe is more involved than the right prefrontal lobe or any other area. The contiguity of the zones or centers is an important argument in these cases. Nature is very jealous about her powers and her different association tracts and centers. For instance, no one would expect to find the writing center next to the leg center, nor the speech center next to the arm center, except, perhaps, in those people who talk with their hands. There is a close contiguity of all these zones, however, and it seems that the intelligence zones are very close to the zones through which intelligence is made possible, speech and writing are located in the left frontal and prefrontal areas.

SYMPOSIUM ON TUBERCULOSIS.

Continued from page 304.

DISCUSSION

ON PAPERS BY DRS. HOLDEN, HAYNES, WHEATON, BEGGS AND KNOPF.

DR. CHARLES H. WILLIAMSON, Chicago, declared that to cure patients only to return them to their centers of infection is not of great value. The most important function of a sanatorium is to remove from our great cities the centers of infection. Whether compulsorily or not is another question. Having disposed of these advanced cases, and having rendered the city a proper place for citizens, attention may be directed to the early cases. In dispensary practice Dr. Williamson has seen patients scrape up a few hundred dollars, go away and come back and re-enter on a life in infected surroundings.

From a business standpoint, he said, the tuberculosis sanatorium is a paying investment. Those familiar with present conditions in Germany and some other parts of the world, and the operations therein of the great universal insurance companies of Europe (to whose particular health-conserving functions our municipalities and state correspond) know that it would be to our advantage, simply from the dollars-and-cents standpoint, to erect municipal or state sanatoria. Such enormous sums of money are wasted every year by the withdrawal of patients from their occupations through incapacity for work for a period of one, two or three years as would pay for the establishment of more than enough sanatoria for the cure of these patients.

It would seem almost like going back to ancient history to harp on the necessity for early diagnosis. A large number of men have grown up to whom the early diagnosis of tuberculosis shapes itself about as follows: They have a case of some obsure pulmonary trouble; they watch it for a little while and find that the patient has a rise of temperature; they are not familiar or are too busy to be familiar or to take the time with modern laboratory research, so they tell the patient to expectorate in a bottle, and then they send it off to some laboratory. Dr. Williams has seen fairly advanced cases of tuberculosis in which the sputum had been examined repeatedly by health boards or private laboratories and nothing had been found. That ended it; the patient was regarded as not being infected with tuberculosis by the physician in question. Every physician should make these examinations himself. He said that it is one of his cardinal principles whenever possible to make examinations himself, with the care they deserve. In many cases a reasonably competent man ought to make a diagnosis long before the bacilli are present in the sputum. Dr. Williamson recently delivered a public address to the laity on the subject of the nostrum evil, and in looking up the matter he was astounded to find the number of people among the poorer classes who are taking the most unheard-of nostrums as cures for tuberculosis. It opened his eyes to the picture of the average Chicago tuberculous individual among the poorer classes wandering around and spending in some cases $100 or $200 in the course of two years on "patent" medicines; in other words, on nostrums which offer absolutely no hope of cure, and, indeed, make them worse, because they tide a man over the time when something could be done for him and he constantly grows worse. In regard to cremation, Dr. Williamson has met with a great deal of opposition from a religious standpoint, but he has always advocated cremation in his private practice, though with the poorest success. His words have been wasted.

DR. ALBERT ROBIN, Wilmington, Del., stated that the sanatorium for incipient cases is of advantage to the patient, but of very little advantage to the community, for the reason that the patient suffering from incipient tuberculosis is the least dangerous to the community. He is the one in whom the bacilli are surrounded and imprisoned, and in which, as a rule, they are very seldom eliminated by the sputum. The patients who constitute the greatest menace to the community, namely, the advanced cases, are the ones who are refused admission in all our present sanatoria. Great effort should be directed toward trying to treat those patients. Dr. Robin would isolate them. He does not mean compulsory isolation, but would give them a place where they could be treated and isolated, and he thinks that the hospital treatment of tuberculosis should receive greater attention than it is receiving to-day. Tent colonies can be arranged at almost any place with very little expense by small charitable institutions, churches and so on, at much less expense than many of the hospitals constantly being erected in the large cities. He furthermore believes that wherever applicable the tent treatment should be instituted in private practice. The open-air treatment is a medicine, as it were, and should be administered wherever possible, irrespective of whether there is a large sanatorium or not in the state or the city. Dr. Robin recently placed a private patient in a tent built in the back yard, properly arranged, with a great deal of benefit to the patient. The problem of notification is confronting Delaware, as every other commonwealth. There is always a danger of engendering phthisiophobia, and beyond that danger line there lies concealment of the disease. Make notification compulsory, make it so that every patient will be stamped and branded "tuberculosis," so that people will be afraid to come in contact with him, and immediately the way is paved for concealment of the disease. A concealed disease is the hardest to combat, and Dr. Robin thinks that we ought to be careful how we tackle tuberculosis, not only from a legislative standpoint, but also in speaking to the laity. He mentioned one instance in which the husband kept away from his wife for two years before she died, fearing to come in contact with her lest he be infected with tuberculosis. The wife was miserable. The children were kept away from her and a great deal was done which was cruel and inhuman, simply because of this phthisiophobia. Dr. Robin thinks it behooves physicians not to engender any such hysterical fear and at least to try to mitigate it. Concerning cremation, he said that the legal objection is a very weighty one. He is not ready to agree with Dr. Knopf that it is at all possible to make a chemical examination of every body before it is cremated. Sudden deaths occur frequently, and Dr. Robin hardly knows of a municipality rich enough to employ the experts involved in the chemical examination of remains. It would be so expensive that the cost even of large cemeteries would be insignificant in comparison. Dr. Robin doubts very much whether cemeteries are so dangerous as pictured by Dr. Knopf. If bodies are buried deeply in the ground the putrefying organisms, or the saprophytes, very soon destroy the pathogenic bacteria; it is almost impossible to isolate pathogenic organ-

isms from old cadavers. There is far greater danger from infection during the funeral or before the body is buried, when the friends come in contact with the body, and this danger would not be eliminated by cremation. Again, the sentiment of the survivors ought to be respected.

DR. THOMAS F. HARRINGTON, Lowell, Mass., said that the relative duties of state boards of health versus local boards of health opens up a very important question. Most of the state boards of health are simply advisory, whereas the local boards of health have almost unlimited executive powers. It seems to Dr. Harrington that the state board of health should be the supreme executive power in health matters in the various states, the local boards of health being part of the state board of health. The Massachusetts State Board of Health issues a monthly bulletin. In Massachusetts it is felt that this bulletin has been a great aid, especially in the antituberculosis crusade. There are many conditions which are simply local in this fight against consumption, and in Lowell a good deal of public comment, enthusiasm and encouragement have been created concerning the eradication of diseases by public talks and particularly by suggesting things and by attracting the attention of the laity. In these days of automobiles the question of dust becomes a very serious one, and in order to concentrate the attention of the public on the seriousness of the dangers from dust arising from automobiling, etc., it has been suggested in Lowell that the streets be sprinkled with an antiseptic solution, selecting for that purpose something which would have the effect of impressing itself on the minds of the laity, and permanganate of potash was suggested, not, of course, arguing that permanaganate of potash could be used on the public streets in a solution sufficiently strong to destroy the germs, if that is needed—the question in the minds of many whether any real infection ever occurs in this way is an open one—but because of the moral effect of sprinkling the streets with a colored solution. The great danger, Dr. Harrington thinks, is in going to the extreme of persecution. This wave of enthusiasm over the United States in the antituberculosis movement has been so great and overwhelming that it is carrying us a little too far, and we have not only created phthisiophobia, so-called, but we are apt, unconsciously, in our zeal and enthusiasm, to go to the bounds of persecution. Let us fight consumption, but let us have it distinctly understood that we are not in any way fighting the consumptive. It is the custom to differentiate, usually by the coughing, etc., the incipient cases and the advanced cases. There is a class of patients which has been overlooked—the so-called susceptible cases. Experience with patients in hospitals soon convinces us that patients with typhoid fever, rheumatism, pneumonia, pleurisy especially, and more especially those cases of surgical interference with great loss of blood, are allowed to go from general hospitals without an examination as to whether incipient phthisis has shown itself.

If we impress on these people that they are more susceptible on account of the loss of blood and the debilitating diseases under which they have recently passed, we would be doing a great good in preventing the spread of tuberculosis among a very susceptible class. Let us be sure, Dr. Harrington said, that our patients have been well fortified after the so-called general diseases before we send them out into quarters infected with tuberculosis. We are just beginning to have the public come up to that plane of education when they believe that consumption is an infectious disease; we are getting them to go to sanatoria and hospitals. If we talk about cremating the tuberculous we are going to defeat ourselves. We are going to create antagonism among the laity which will result in the hiding of the disease and in a great deal of lukewarmness in the support of movements we are trying to foster, and on that ground he hopes that the impression will not go out that physicians advocate the cremation of those dying from tuberculosis.

DR. C. C. BROWNING, Los Angeles, emphasized the fact that in the reporting of cases we may find the residence of the individuals affected and in that way we may know with whom they come in contact, and by systematic examination of those people, we may discover the disease before symptoms are sufficiently manifest to cause them to consult a physician; and by changing their mode of life we may prevent the development of the disease.

Dr. Browning impresses on these patients that the care which they should give to themselves to secure their best interests will incidentally protect the public. He believes that many patients are deprived of the opportunity of permanent recovery by the constant reinfection of themselves by their own carelessness, and when this view is presented to them they have a very different interest than when they are taught and induced to take this care for the protection of the public only. Another thing: the patient who is rightly instructed and is careful is not a menace to others. It is the ignorant and the careless patient who is dangerous. The matter of early diagnosis, he said, is one it is not necessary to insist on, but to those who are meeting these cases infrequently it is certainly one that is very important. It is surprising how many patients come to the sections of country where tuberculous patients are sent with the idea that they are predisposed to tuberculosis—some bronchial trouble—when phthisis is really far advanced and they probably have a few weeks or at most a few months to live. Municipal legislation usually emanates from the municipal boards, or, in many places, from the local health officers. The local health officers are not always men who have given careful attention to tuberculosis. In California to-day there is a great wave of legislation of this kind sweeping over the state. The state sanitary convention was held in San Francisco on April 15. At that meeting a committee was appointed to draft a form of resolution which might be submitted to the several municipalities; of course, to be modified according to their various needs. The state society has a committee on tuberculosis, and that committee had recommended to the state society the adoption of a similar form of ordinance. This was done the day following. The morning following that came the disastrous earthquake and fire which ended the deliberations of the state medical society, but the matter is still in the hands of the committee and will be taken up at the next session.

DR. P. H. BAILHACHE, New York, in regard to the transportation of tuberculous patients said that all hospitals in the Public Health and Marine-Hospital Service have a ward, isolated from the other wards, in which tuberculous patients are housed until they are fit to be forwarded to the Marine Hospital Sanitarium at Fort Stanton, N. M. The precautions taken may be summed up as follows: Usually four are sent at a time, so that they will occupy seats and beds opposite each other. They are supplied with nickel-plated spit cups (similar to those commended by Dr. Knopf some time ago), and with disinfectants to disinfect the cups when it is necessary to clean them; they are also furnished with individual glasses for drinking purposes; they are supplied with sufficient money to purchase their rations *en route;* the cars in which they travel are disinfected on arrival at Chicago (where the change is made) and at Carrizozo, N. M. The men are given full instructions how to use their spit cups, to drink out of their own glasses and to be careful not to communicate with passengers in the train or to inform them where they are going and why. The reason for this is simply not to cause alarm in the train. The class of men that they have to deal with is sailors. The vessels they come from are, of course, more or less infected, and it is obligatory on the officers of the service to fumigate the vessel or portion of the vessel inhabited by these sailors before the vessel can leave port. Dr. Bailhache recommended other physicians sending patients west to any sanatorium to furnish them with spit cups and individual glasses, and such instructions as will be of service to the patient and thereby prevent infection of the car to any great extent.

DR. FREDERICK A. TUCKER, Noblesville, Ind., is of the opinion that the states and municipalities can do more in the control of tuberculosis by the complete registration of all cases coming within their jurisdiction, that they may provide for suitable disinfection of the premises and make it a duty on the municipality to teach the inhabitants and those infected how to care for themselves, so as not to give tuberculosis to others. In Indiana lecturers visit the different teachers' institutes

and farmers' institutes and give instruction on the home management of tuberculosis, and it is a part of the duty of the teachers in the public schools to teach personal hygiene to the pupils. In that way it is hoped to eliminate a great deal of tuberculosis. The Indiana State Board of Health has adopted rules regarding the sanitation of transportation companies, and the greatest and heartiest coöperation has been from the railroad companies themselves and from the sleeping-car companies. The rules adopted by the Indiana State Board of Health have been adopted by the Pullman company and the Pennsylvania system. Dr. Tucker is in favor of a state law or a municipal law against indiscriminate expectoration. He believes it is the greatest means of the spread of tuberculosis, and that it should be put as a duty, not only a legal but a moral duty, on every one. In the education of the public Dr. Tucker believes in the organization of local societies, and especially that the newspapers can do more for the medical profession and more for the subject of tuberculosis than can be accomplished in any other manner. He believes in states establishing tuberculosis sanatoria for, say, a community of 200,000 or 400,000, making it on the order of a health farm, which in a way could become self-supporting and not be a burden on the state.

DR. H. S. POMEROY, Boston, said that very close to the foundation of the prophylactic work that we hope to do in combating tuberculosis is some arrangement for the care of the sputa. He is satisfied that the general public is to-day more willing than able to be reasonable in this respect. Dr. Pomeroy said that we should provide cheap temporary sputum receptacles which can be burned. A number of these have been devised, but it seems to him that there should be at least one or two good forms of receptacles for use in the room and one or two good forms for use in the pocket, which, by being made, perhaps, by the million, could be offered at a merely nominal price, or given away by druggists to poor people, and these, being burned, could save an enormous amount of infection from getting among the people.

DR. LISTON H. MONTGOMERY, Chicago, said that at times the sentiment is in one direction and then the pendulum swings in another. He said that if in the near future the Congress of the United States should establish a department of health, with a physician as the cabinet secretary, not only tuberculosis but insanity, venereal and other infectious and contagious diseases would be greatly lessened and the welfare of the people would be materially enhanced. The papers on tuberculosis and other papers which have been presented year after year before this section reach mainly the medical profession, whereas if literature were sent out from an official head of the government direct to the people regarding these matters by secretaries of state boards of health, it is not impossible that the great dark plague (syphilis) and perhaps the various other types of venereal diseases, and tuberculosis as well, within the next century will be a thing of the past and will be exterminated from this, the fairest land on which the sun has ever shone.

DR. J. T. SEARCY, Tuscaloosa, Ala., said that no allusion has been made to tuberculosis among the negroes. He believes that physicians of the South have a more serious problem as regards general sanitation and public health than those in the north. If there is any one class of people, any one race anywhere susceptible to tuberculosis, it is the negro. Dr. Searcy is at the head of two large state institutions, in which are about 1,200 whites and about 600 negroes. It has almost reached the point that if bacilli are found in the sputum of a negro he is at once checked off as doomed. A number of whites who have been in the institution twenty-five years and who are known to be tuberculous are still living. The whites respond to treatment and get well, and the deadroom shows the healed lesions of tuberculosis in their lungs, whereas in the negro in many instances three or four months at best is as long as one is expected to live if he has tuberculosis. The mortality among them from tuberculosis is nearly twice as great as among the whites. How to correct this is one of the most difficult problems. To reach them with education, to bring them up to the point of appreciating the danger of the sputum and of infection to others is a serious question. In the insane hospital with which Dr. Searcy is connected there are nearly six times as many whites as there were in 1870; about fourteen times as many negroes. Tuberculosis at large in the state, according to statistics, is increasing even at a greater rate than insanity. It is now about twice as great among the negroes as among the whites. Almost every organ in the body is affected. Dr. Searcy said that it will be a difficult question also to introduce the cremation of tuberculous bodies as a general measure among Southern people—among the negroes particularly.

DR. G. WALTER HOLDEN, Denver, said that he can not agree with the statement that consumptives should be branded. He agrees with Dr. Harrington in his statement that we are fighting consumption and not the consumptive. This is a work that must be controlled by municipal and state organizations, especially by city organizations. This disease is a disease of cities, and until we wipe out their plague spots we shall have constant sources of infection. He emphasized the necessity of the American Medical Association taking a more decided stand in the fight against tuberculosis. There is no tuberculosis section either in the American Medical Association or THE JOURNAL. Why should not such a section be instituted, either under the Section of Hygiene and Sanitary Science, that of Medicine, or independent of any other section? The circulation of THE JOURNAL of the American Medical Association is over 45,000; with a tuberculosis section it would be possible to carry weekly information as to what is being done in the crusade against this disease to physicians in all parts of the United States.

DR. CLARENCE L. WHEATON, Chicago, believes that we must establish state sanatoria and bring the poor under control, providing proper homes for them, and in the incipient cases giving the patients an opportunity to recover, allowing them to return to the commonwealth in proper physical condition to resume labor. Registration is an excellent thing, and is to be advised in all municipalities, in all communities. In regard to cremation he thinks that we all agree with Dr. Knopf, realizing, however, the many difficulties that must enter into the problem mainly through sentiment. He said that in his travels through the Southwest he observed that the railroads made practically no provision for the tuberculous; at some of the stations where it was necessary to change cars there was not even an invalid chair to transport the patient from the train to the waiting-room. Before the Illinois State Medical Society a year ago Dr. Wheaton advocated that the profession of the state, through the medium of the legislature, take some action in this matter and appeal to the railroads running out of Chicago to make some provisions for these patients. As yet no action has been taken.

DR. S. A. KNOPF, New York, said that as a New Yorker he knows what compulsory registration means. It has been found that a command to the physician to report does not work, but by requesting him to report cases the health department usually gets what it wants. It is left to the discretion of the physician to answer the following questions printed on the notification blanks: "Do you or do you not wish an inspector to visit your patient?" If he says "No" the patient is not interfered with. Regarding the spitting paragraphs, Dr. Knopf said that he has been instrumental in putting up some himself, but as he grows older he finds the command, "Don't spit, it costs you $100 or $500," is not nearly so effective as putting a spittoon where it is needed and putting over it, "Spit here." The necessity of preventing tuberculosis during school life is essential; but let us not make an outcast of the pupil or teacher. They should be taken care of in school sanatoria. Tuberculous school teachers in the earlier stages, he said, could be advantageously employed in such sanatoria in the performance of their duties.

Dr. Knopf said that he believes in special cars for the tuberculous when possible, but he also believes that we should not become phthisiophobiacs. Not infrequently physicians find patients recovering who have had large-sized cavities. It is exceedingly difficult at times to diagnose a small cavity. He agreed that it is the advanced case of tuberculosis which is dangerous. Such a patient is dangerous within the radius of the four walls where he is confined, but Dr. Knopf believes

that a patient in the early stages, up and about, spitting here and there and everywhere, is the one spreading tuberculosis. The committee for the prevention of tuberculosis in New York has issued circulars to all physicians in New York, begging them not to send any patient of moderate means to distant countries or states. They emphasize the possibility of home treatment and at the same time do not go to the extreme of stating that there is nothing in climate.

There is a great deal of truth in the inability of modern mothers to raise proper children. There are too many bottle-fed babies and not enough breast-fed babies. Children sometimes are badly reared through ignorance. A child born with a tuberculous diathesis is a natural-born bad eater, and discipline alone can overcome his tendency by teaching him to eat properly and at regular intervals. Dr. Knopf says that early diagnosis is not only often neglected, but too much reliance is placed on the discovery of the bacillus in the sputum. If the bacilli are in the sputum there is already disintegration of pulmonary tissue and the patient is no longer an incipient case. Any one can make a diagnosis of tuberculosis by sending the sputum to the health department. The important thing is the physical diagnosis before the appearance of the bacilli. Phthisiophobia could be overcome by physicians if instead of calling tuberculosis a dangerous contagious disease, they call it communicable. There is a difference between "communicable" and "contagious." If we call a disease "communicable" it conveys the idea that we have to fight the carrier, and the carrier is the sputum, and all that we have to tell a patient to do away with the danger of infection is: "Be careful when you cough; hold your hands before your mouth when you cough; never expectorate except in a proper receptacle." The simpler the directions the more readily are they obeyed. Dr. Knopf was enthusiastic in the early days and gave every one a pocketflask, until one day a patient gave it back and said: "Use one yourself," and he did. In a street car he imitated the consumptive cough, took out his flask and deposited some saliva therein. Everybody got out or moved away from him, because they were scared by this pocketflask. He now tells his patients to cut up a lot of pocket squares; put clean ones in one pocket and the soiled ones in the other, and have the pocket lined with oilcloth. Dr. Knopf said that for fifteen years he has been a strong advocate of sanatoria for incipient and early cases, and general hospitals for the advanced, but that the home treatment must not be forgotten. We have, perhaps, one bed in a sanatorium here in the United States to a thousand consumptives. The 999 must be treated, too, and must be treated at home and can be treated at home if necessary. He advised a room with good exposure to light and sun, giving the patient plenty of good, nutritious food, installing, if possible, a window tent and arranging for proper hygiene; in short, giving the patient as nearly as possible at home the treatment which he would receive in a sanatorium. The solution of the tuberculosis problem rests on a great many factors. So long as we allow the tenement-house population in cities, towns and villages to live as unhygienically as now, so long as we allow child labor and the underfeeding of the poor, no matter how many sanatoria we may have we will only create every day a new lot of consumptives to be sent to sanatoria. We must begin at the beginning: proper housing, proper feeding and better education.

In defense of cremation he said that he did not make the statement that every individual dying should be examined and a costly chemical analysis made. He said that in the case of every one who wishes to be cremated or shall be cremated an analysis should be made unless there is absolute certainty as to the cause of death. Cremation is very much cheaper than burial; it costs only $25. For the poor this means a great deal. Dr. Knopf declared that he is pleading mainly to do away with the dangers arising from infectious diseases far more dangerous than tuberculosis. Tuberculosis is a social as well as a medical disease, and in discussing it we must look at all sides. Only by combining all our efforts as physicians and as philanthropists, conjoined with wise government, the thorough training of physicians and the coöperation of an intelligent people shall we be able to master the great white plague.

SUPERSTITION IN TERATOLOGY.

(*Continued from page 311.*)

DISCUSSION.

DR. D. S. HANSON, Cleveland, Ohio, said his personal experience led him to believe that attributing deformities to impressions made on the mother is usually the result of an afterthought. In cases in which he has had the greatest reason to suspect such deformities they have always failed to materialize. One instance was that of a woman six weeks pregnant, who had gone to the dime museum during the time the "dog-faced man" was on exhibition. The man came up behind her and "barked" over her shoulder. She was greatly wrought up over the fact and fainted, yet a normal child was delivered. He believed the experience of nearly all medical men coincides with this opinion.

DR. GEORGE N. ACKER, Washington, D. C., referred to a case under his observation in which a father had been born without an arm, and the mother feared that the child would be born with only one arm. As soon as the child was born she asked whether it was born with two arms. Were there any truth in such statements concerning maternal impressions, he thought they would be borne out in a case like this. In this case and other cases he has gone to the text-books to prove to the patients that such things are improbable, but as Dr. Shelly said, the text-books create the impression that such things can occur.

DR. J. B. LEARNED, Northampton, Mass., said that evidence in this matter is like evidence in any other pathologic condition. Authors of text-books are convinced, doubtless, of the correctness of their position. Dr. Shelly is likewise convinced of the soundness of his own opinion. These are human measurements both in text-books and in papers read before the Association. He believes that it is just as possible for a mother with certain mental conditions, suddenly acquired, to leave the impress on the fetus as it is that a child born from a highly intellectual mother and father should possess none of the traits of its parents. It is, however, absolutely beyond human reach to fathom all these mysterious phenomena of birth.

DR. JOHN LOVETT MORSE, Boston, thought that the last speaker was confused in that he had included those conditions and tendencies which may be transmitted by the sperm and the ovum with others which can not be transmitted after the fetus is begun.

DR. L. F. BISHOP, New York City, said that although he was not entirely convinced, still it may be true that there are no transmissions of anatomic defects from the maternal impressions on the offspring, and that the incidents recited are merely coincidence. Nevertheless he felt very sure that children do inhert from a mother a nervous impress from nervous conditions existing during pregnancy. He has charge of the children's department for nervous diseases in a large clinic and sees many hundreds of defective children. The histories obtained from their mothers often show that while they are carrying these defective children they undergo some particular form of hardship, the husband being imprisoned, or drunken and abusive, or something of the kind. From a great many such cases his impression is that the nervous condition of the mother during pregnancy has an influence on the nervout and mental makeup of the child. Whether this is ever specific in influencing the physical characteristics of the child is a little finer matter.

DR. B. B. SIMMS, Talladega, Ala., thought that a child might take on some acquired habit or disposition of the parent. For instance, a couple whose habits are innately good will naturally have children who will likewise be good; but, suppose after having two or three children the parents should acquire bad habits. Of children born subsequent to this and showing bad habits there would be no hesitation in saying they had taken the habits from the parents. The nervous state of a mother while carrying a fetus may be described as an acquired state. In certain cases he did not see why morbid impressions should not be transmitted to the fetus.

DR. JOHN LOVETT MORSE, Boston, referring to what Dr.

Bishop said, said there can be no doubt that the mother's general condition affects the general condition and development of the fetus. It seemed to him reasonable to suppose that if the father was drunk and committed to prison during the mother's pregnancy, he had probably been drunk before, and that the tendency was transmitted through the sperm and not through the mother.

DR. E. T. SHELLY, Atchison, Kan., did not know how this theory happens to be in American text-books. One of the authors whom he quoted has a signed article in Appleton's New Universal Encyclopedia and Atlas, in which he repudiates absolutely everything he said in this connection in his text-book. In regard to the contention that the mental condition of the mother may leave its impress on the child, Dr. Shelly said that in a general way may be true. The nutritional disturbance resulting from violent and prolonged nervous annoyances might be reflected in the fetus, but as Dr. Morse explained, much of such reflected ill to the fetus is due to conditions existing before impregnation, and is, therefore, hereditary, and might just as easily be paternal as maternal in origin. But fetal disturbances may occur in a general way after impregnation, simply because of nutritional changes in the blood of the mother. Even pregnancy may be interrupted in this way. Such fetal disturbance is, however, a vastly different thing from the transmission of a certain effect to a certain portion of the body of the child and the production of a specific fetal deformity. In presenting this paper he had tried to help rid the profession and its obstetric text-books of this preposterous notion which has absolutely no scientific basis, but which is simply handed down and is copied from one text-book into another. The prevalence of this superstition is not only a reflection on modern medicine, but the source of so much mental distress to so many mothers that it surely merits most earnest attention.

SYMPOSIUM ON ROENTGEN-RAY THERAPY.

(*Continued from page 318.*)

DISCUSSION

ON PAPERS BY DRS. LEONARD, BOGGS AND WILLIAMS.

DISCUSSION.

DR. G. C. JOHNSTON, Pittsburg, Pa., stated that these papers contained nothing new. The perusal of literature gives the impression that there is need for what these papers have been giving, that is, the elementary principles. Many doctors appear to think that the only thing necessary is the possession of an apparatus and a patient. That, however, is not conducive to result in radiotherapy. Still, this belief apparently is responsible for many of the papers that appear from week to week in the medical journals. For instance, one man treats six cases of carcinoma of the breast, with six failures. Therefore, he considers the *x*-ray a failure. He treats superficial carcinoma and deep scirrhus, with the technic distinctly stated for lupus vulgaris or acne, and such reports do not give a good impression. It is necessary to keep reiterating until men discover that the possession of a little knowledge is a dangerous thing.

DR. PERCY BROWN, Boston, said that the first thing needed is to get the matter of dosage down to a fine point. The day of guess work is passed. The second point to be considered is the question of limiting the work, so that the best results can be obtained. The true *x*-ray worker is the one who is a dermatologist as well as a physicist.

DR. J. H. STUART, Minneapolis, made a brief statement in regard to the treatment of acne by the high frequency current. His experience, covering a period of over three years during which were treated a number of cases ranging in variety from the simple to some of the very aggravated and obstinate forms, encourages him to entertain the belief that all the common forms, at least, of this disease may be cured by this modality.

DR. C. A. DENNETT, Arlington, Mass., said that only a few years ago there was a great interest shown in the *x*-ray and now we hear almost less of the *x*-ray than we do of anything else. He thinks that this is due to so many people having tried it, applying it with very little knowledge, getting poor results, and then giving it up. Some of the mistakes made at first were in the technic. He thinks the static machine with the soft tube is the thing to use in acne. In eczema, it simply melts away; old chronic cases which had everything done for them will be cured. In diseases of bones and joints even the surgeons themselves agree that the *x*-ray is of great aid and value. In the diagnosis of early cases of tuberculosis it is being made use of a great deal.

DR. WILLIAM J. MORTON, New York City, said that his opinion of the present status of the *x*-ray is that it is at a period of partial therapeutic eclipse by reason of being abused by ignorant workers. Many doctors think that all they have to do is to buy a machine and administer the *x*-ray to get cures. As to the particular radiation that comes out of a tube, he believes in the therapy of a high vacuum tube, 7 to 12 inches alternating spark, because we have to deal not with deep lesions only, but intermediate lesions, as well as superficial. A tube that gives no yellow color whatever is the safest; it obliterates the chance of injury to the patient and gives the best therapeutic effect. He has never seen a case of eczema that has not been promptly benefited by *x*-ray treatment. He has also found the radiation of great value in chronic tonsillitis and in chronic lesions referred to the appendiceal region. In regard to malignancy, the *x*-ray is the first agent outside of mechanical means which has produced an actual effect to remove cancer. The *x*-ray therapist has no differences with the surgeon. The *x*-ray and surgery must combine their efforts.

DR. M. K. KASSABIAN, Philadelphia, reported the effect of the rays on the site of a former sarcoma, removed two months before *x*-ray treatment was begun. He irradiated the cicatrix through an opening in a lead sheet, the size of a silver dollar. The part exposed was retarded in growth and did not recur. The part covered with the lead sheet later developed a sarcomatous growth. This proves the retarding action of the *x*-rays. When giving *x*-ray treatment, he strongly advises that the operator should not expose himself to the direct action of the agent. The method he adopts is as follows: He steps into an adjoining room and observes the treatment and fluorescence of the tube by the reflection cast into a mirror, which is set at an angle in the corner of the laboratory. When he wishes to cease the seance, he has a clock with an automatic switch arrangement. When, for instance, five minutes have elapsed, the switch cuts off the current and a bell rings.

DR. K. DUNHAM, Cincinnati, O., said that the most important part of these papers is the cry against ignorance. The men who have made these reports in no way over-stated the facts; they have held much in reserve. They have reported what they know. They have reported not what they have seen one minute or seen a few cases of, but they have reported cases they know so well, so thoroughly backed by the physicians who sent them that no report of one of these cases could be better founded on scientific observations and fact. Not one of these men, he said, would dare come to the American Medical Association and say he cured appendicitis. Not because it might not be true, but because they are so imbued with the necessity of telling only those truths which have thoroughly proven what they can show proof for.

DR. M. F. WHEATLAND, Newport, R. I., said in regard to the treatment of tubercular adenitis, that considering the nature of the surgical treatment proposed, requiring the removal of all the lymphatic glands of the neck with the possibility of further infection of the patient, and also the unsightly scar and deformity which often remains, and comparing them with the results produced by the *x*-ray, physicians are led to strongly favor the latter method. He has treated seven patients with the *x*-ray with excellent results. One of them had had several glands curetted many times without success, the cavities invariably filling up with granulation tissues. This case (the worst of all) responded more promptly to treatment than the others. He had nothing to offer his patients suffering with acne until he began to use the *x*-ray; not only pustular acne, but the most intractable of all forms, acne rosacea, rapidly yields to this agent with the ordinary technic.

As to Dr. Morton's allusion to appendicitis, it might be interesting to relate the case of Dr. S———, a retired surgeon, who requested him (Dr. Wheatland) to continue the *x*-ray treatment he had been receiving in New York at the hands of Dr. Meyer. He said that it was the opinion of both Dr. Meyer and Dr. W. T. Bull that he was suffering from a chronic appendicitis, with adhesion of the intestines which produced pain when fermentation was present. On account of his age they would not suggest an operation, but advised a continuation of the *x*-ray treatment which he had found gave great relief to his pain, and to aid him in obtaining more regular movements of the bowels. After a few weeks he discontinued treatment and in time his pain returned with greater severity. Dr. Bull subsequently performed an operation and removed a cancerous growth from the intestines.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEW YORK State Boards of Medical Examiners, Albany, January 29-February 1. Chief of Examining Division, Charles F. Wheelock, Albany.

NEVADA State Board of Medical Examiners, Carson City, February 4. Secretary, Dr. S. L. Lee, Carson City.

KANSAS State Board of Medical Registration and Examination, Topeka, February 12. Secretary, Dr. F. P. Hatfield, Grenola.

NEBRASKA State Board of Health, State House, Lincoln, February 13-14. Secretary, Dr. George H. Brash, Beatrice.

Delaware December Report.—Dr. J. H. Wilson, secretary of the Board of Medical Examiners of Delaware, reports the written examination held at Dover, Dec. 11-13, 1906. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. One candidate, a graduate of the University of Maryland in 1905, was registered through reciprocity.

The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Baltimore Med. Coll.	(1904)	78.5
Maryland Med. Coll.	(1905)	82.
University of Pennsylvania	(1905) 86.6; (1906)	84.5, 87.7
Temple College	(1906)	83.7

The following questions were asked:

ANATOMY.

1. The first vertrebra is how attached to the skull? 2. Give shape, size, formation and articulation of first and second vertebra. 3. Give shape, approximate size, origin and insertion of trapezius muscles. 4. Describe choroid plexus and situation of fourth ventricle of the brain. 5. Give origin and distribution of superior maxillary nerve. 6. Explain origin and distribution of brachial artery. 7. Give branches of internal carotid artery and their distribution. 8. Give structure, situation and size of gall bladder. 9. Give structure, formation, situation and size of the gastrohepatic omentum. 10. Give location, shape, size, structure and blood supply of the diaphragm.

PHYSIOLOGY.

1. What is the function of the sudoriparous or sweat glands, where is the dominating sweat center located, and how is this excited to action? 2. Name the functions respectively of the anterior and the posterior roots of the spinal nerves. 3. Give functions of the liver and name the blood vessels entering it. 4. In what way does the blood circulate through the heart? 5. What are the mechanical uses of saliva? 6. What gases have we in the stomach? 7. How do arteries differ from veins? 8. Are the movements of the lungs passive or active? 9. What changes are produced in the atmospheric air by respiration? 10. How does the function of an afferent or centripetal nerve differ from that of an efferent or centrifugal one?

SURGERY.

1. In ligating the superficial femoral artery at its lower third, what structures are severed and what are the anatomical relations? 2. Describe traumatic inflammation. 3. How and why are fever and delirium induced by physical injuries? 4. Bone fractures are how classified? Diagnose and treat a typical fracture of each variety. 5. Dislocations are how classified? Diagnose and treat a typical case of each variety. 6. Explain reasons for preferring any special operation for amputation of both forearm and leg. 7. Explain method of procedure in operating for relief of fistula in ano. 8. In operating for relief of urinary calculi, what method would you use and why? 9. Differentiate hydrocele and chronic orchitis. 10. Deep seated pus cavities are how treated?

PATHOLOGY.

1. Give morbid anatomy of cerebral hemorrhage and name the common cause when it appears in early life. 2. How does the pathology of locomotor ataxia differ from that of ataxic paraplegia? 3. Define dementia and give its pathology. 4. State pathology of tinea circinata. 5. Define indicanuria, name its chief sources and the pathological conditions in which it is most usually found. 6. What is the pathologic anatomy of phlebitis? 7. Name morbid anatomy of Hodgkins' disease. 8. Give pathology of biliary calculi. 9. State difference in pathology of catarrhal, ulcerative and intestinal appendicitis. 10. How does tachycardia differ from bradycardia, and in what pathologic conditions are they found respectively?

PRACTICE OF MEDICINE.

1. Mention the conditions that contraindicate general anesthesia. 2. Define arteriosclerosis. Give its etiology and state the age at which it is most liable to occur. 3. What are the symptoms and treatment of acute laryngitis in children? 4. Mention five possible complications of typhoid fever and your treatment of each. 5. Give symptoms and treatment of acute lobar pneumonia. 6. What is meant by immunity? In what ways may immunity be acquired? 7. Define neurasthenia. Give symptoms and treatment. 8. Differentiate tubercular arthritis from rheumatic arthritis. 9. State the symptoms and outline the treatment of (a) opium poisoning, (b) strychnin poisoning. 10. Give the symptoms and treatment of hydrophobia.

OBSTETRICS.

1. Name the internal female organs of generation and state the functions of each. 2. How would you diagnose pregnancy in the early months, before quickening. 3. Mention conditions that may require induction of premature labor. How would you produce the same? 4. What is ectopic gestation? Name its varieties and state how its diagnoses may be established. 5. How would you proceed if called to a case of neglected shoulder presentation? 6. Give causes, pathology and treatment of ophthalmia neonatorum. What is the great danger? 7. State the causes and give the management of postpartum hemorrhage. 8. State causes and treatment of mammary abcess. 9. Name the important diameters and measurements of (a) the female pelvis, (b) the fetal head. 10. Give the positive and doubtful signs of pregnancy, beginning with those you consider of the most importance.

MATERIA MEDICA.

1. Give the preparations and classifications of phenacetin, somnal and hydrogen dioxid. 2. What are the principal anthelmintics, mode of action? 3. Name twelve officinal alkaloids. 4. What are the officinal extracts, how obtained? 5. What is chrysarobin, where found and how applied? 6. Name the alkaloids of veratrum viride. 7. What are the preparations of guaiacum, give physiologic action? 8. Name six motor excitants and six motor depressants. 9. Name the preparations of iron, their doses and incompatibles. 10. What is picrotoxin, what combinatory action does it represent?

THERAPEUTICS.

1. What analogy exists between the nutrition of health, the disturbances of disease and the action of remedies? 2. Give the origin of benzoin and menthol, with their therapeutic applications. 3. In uremic poisoning what remedies are required? 4. What is the physiologic antagonism between belladonna and morphia? 5. What are the principal preparations used as antiperiodics? 6. Of what therapeutic value is amyl nitrate? 7. What respiratory stimulants exalt the functions of the respiratory center of the medulla? 8. For what is stramonium used, what are its physiologic actions? 9. Give the preparations and doses of the mineral acids with their therapeutic effects. 10. Give the preparations of bismuth, how administered, and indications for use.

HYGIENE.

1. Will the destruction of offensive odors remove the conditions injurious to health? 2. In what way may the application of fertilizers affect the public health, and how can it be avoided. 3. What are the nitrogenous constituents of food, from whence derived and what are their functions? 4. What is the period and source of infection and the necessary time of quarantine, in (a) smallpox, (b) scarlet fever, (c) diphtheria, and what do you understand by quarantine? 5. How would you manage an outbreak of contagion among school children? Answer in detail. 6. Describe a practical method for the disinfection of clothing, bedding, etc. 7. How would you provide for an infant who never has the breast available? Name food you would prefer, quantity you would advise, and frequency of feeding, according to age. 8. What general preventive measures would you recommend to stay the increase of tuberculosis? 9. Give the advantages or disadvantages of a state sanatorium for the treatment of tuberculosis. How should it be constructed and managed? 10. What in detail is the duty of physicians in attendance on infectious disease, to prevent its spread?

CHEMISTRY.

1. What is analysis, and synthesis? 2. What is the difference between physical and chemical action? 3. What are the essential ingredients in air? Is it a mixture or a chemical compound? Give proof. 4. What are the chemical properties of phosphorus? 5. What is Labarraque's solution and on what does its disinfectant value depend? 6. What are the physical and chemical properties of ammonia, and how does it differ from other alkalies? 7. Give method of disinfection in detail— 1st, with sulphur; 2nd, with formaldehyd. 8. Which is the more efficient and why? What are the best tests for albumin and sugar in urine? 9. What is eucalyptol, and what are its uses in medical practice?

Yale Medical School Advances Requirements.—Beginning with the session for 1909-10 the requirement for admission to Yale Medical School will be two years of university work, which must include courses in inorganic chemistry, physics and general biology. Arrangements will be made, whereby, through a proper choice of subjects, the student may secure both the B.A. and M.D. degrees in six years.

Wyoming December Report.—At Cheyenne, Dec. 5-7, 1907, only one candidate was examined, a graduate of the Denver and Gross College of Medicine in 1906. He passed with a grade of 84.5.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Hemoptysis.

Abrams, in a communication to the *Lancet*, discusses the use of amyl nitrite in this condition. He states that his experience with the drug, extending over a period of about five years, justifies him in concluding that it is the most efficient and expeditious remedy we possess in the treatment of hemoptysis. In a number of instances it failed to influence the hemorrhage, yet for uniformity of action it is without a rival in this condition. Unless the drug proves efficacious after the first administration subsequent inhalations do no good. Unless enough of the drug is inhaled to induce the physiologic action no therapeutic results should be expected. The author states that the action of the remedy is best determined by a study of the nasal mucosa as a center for the discharge of reflexes. It is his belief that the action of amyl nitrite in hemoptysis is due essentially to an irritation of the bronchoconstrictor fibers of the vagus which, acting on the bronchial musculature, causes the latter to express the blood from the lungs as water is squeezed from a sponge. The blood-pressure factor in explanation of the action of the drug he does not believe adequate.

Brown, in the *Amer. Jour. of Med. Sci.*, discusses this subject and shows that all drugs which cause a contraction of the blood vessels, as ergot, adrenalin, etc., if acting on the pulmonary vessels, would be directly injurious, as they would cause a contraction of the healthy vessel, while the diseased vessels, incapable of varying in diameter, would be subjected to increased instead of lessened tension. Recent experimental work would seem to indicate that lessened tension from dilatation of the pulmonary vessels does not take place. The nitrites have recently been brought into use, and their action consists chiefly in producing a dilatation of the peripheral vessels, mainly of the head and neck, and of the vessels of the splanchnic area, causing a marked fall in the blood pressure, while the heart action is accelerated. The different members of this group vary in regard to the rapidity, the intensity and the duration of their action. Amyl nitrite acts instantaneously, but the action lasts only for about five minutes. Nitroglycerin acts more quickly and more intensely, but for a slightly shorter period than sodium nitrite. In both the action is well marked in fifteen minutes and lasts for from one to two hours. It is dangerous to lower the blood pressure too much and dangerous not to lower it enough. To overcome these difficulties Brown now takes the patient's blood pressure every two hours, and orders the doses accordingly, aiming to keep the tension within certain limits. He uses amyl nitrite at once, and if the patient is nervous administers morphin (⅛ grain) hypodermically, and gives with it nitroglycerin, or, on account of its greater stability and fewer untoward symptoms, sodium nitrite; in these cases the sodium nitrite or nitroglycerin should be given hypodermically, immediately, and repeated as often as necessary. A careful nurse may be quickly trained to take accurate readings of the sphygmomanometer, and the cuff may be left on the arm indefinitely, if preferred. To determine at which level to keep the blood pressure, Brown takes it several times at short intervals and attempts to keep it usually between 100 and 115 or 120 mm. of mercury. It is comparatively easy to do this with the aid of sodium nitrite.

Hemoptysis frequently occurs in the early morning hours, and the patient awakens spitting blood. Howell's theory of sleep offers a striking explanation of this phenomenon. This observer holds that sleep is due to the fatigue of the vasoconstrictor center (or centers) and he has shown that a dilatation of the peripheral vessel occurs during sleep. In the early morning hours, when the vasoconstrictor center is regaining its lost tone, there are concomitant variations in the pulmonary blood pressure. Sudden variations in pressure are, in all probability, more dangerous than a steady high pressure. To prevent these variations as much as possible and to equalize the blood pressure, Brown has recently given morphin and sodium nitrite hypodermically between midnight and 2 a. m., waking the patient if necessary.

To recapitulate briefly, he suggests that the blood pressure be frequently observed, that morphin be used when necessary to quiet the patient and so to equalize the blood pressure, that sodium nitrite be administered to reduce, when necessary, the blood pressure, and that in case of a sudden hemoptysis amyl nitrite be administered at once when possible to produce a marked fall in the blood pressure and so to aid in a temporary cessation, at least, of the hemoptysis.

Ringer recommends the following for this condition:

℞. Fluidextractum ergotæ ..... f℥i 30
Olei gaultheriæ ..... m. iv 24

M. Sig.: One teaspoonful every hour at first; then every four to six hours.

Pepper recommends the following for the same condition:

℞. Acidi gallici f3ii 8
Acidi sulphurici aromatici f3i 4
Glycerinæ ..... f℥i 30
Aquæ dest. q. s. ad ..... f℥vi 180

M. Sig.: One teaspoonful at a dose; repeat frequently.

The *Canada Medical Record* recommends the following:

℞. Tinct. digitalis f3iss 6
Olei terebinth. f3iii 12
Olei menth. pip ..... m. xx 1 20
Acidi sulphurici aromatici f3iii 12
Spt. vini rect f3xvi 60

M. Sig.: From 40 to 60 drops, well mixed with sugar, to which one or more tablespoonfuls of water may be added, every two, three or four hours, according to the urgency of hemorrhage.

Skoda has recommended:

℞. Pulv. aluminis 3i 4
Sacchari 3ss 2
Pulv. ipecac. comp ..... gr. xx 1 20

M. et ft. chartulæ No. vi. Sig.: One powder every two hours.

Influenza.

In the very early stages of this affection anodyne and antipyretic remedies are indicated. The following will be found useful during the first hours of the attack:

℞. Aspirin (acetyl-salicylic acid) 3i 4

Mix and divide into six powders. One powder every three hours until effect is produced. Each powder should be followed by a glass of water, preferably hot. Or:

℞. Aspirin (acetyl-salicylic acid) 3i 4
Sodium bicarbonate 3iss 6

Mix and divide into six powders. One powder every two hours until effect is obtained. These powders should also be followed by glass of water. Or:

℞. Acetphenetidin ..... gr. xx 1 20
Pulv. opii et ipecac ..... gr. x 60

M. et ft. chartulæ No. ii. Sig.: One powder at once and repeat one powder in two hours if necessary.

Yeo recommends the following prescription to be given later in the attack for the hard and distressing cough which is so often one of the most troublesome and lingering symptoms:

℞. Apomorphinæ hydrochloridi ..... gr. i 06
Morphinæ hydrochloridi ..... gr. 3/4 045
Acidi hydrochloridi dil f3ss 2
Syrupi f3iv 15
Aquæ dest. q. s. ad ..... f℥iv 120

M. Sig.: One or two teaspoonfuls for a dose.

Diabetes.

Croftan, in the *Clinical Review*, recommends the following, to be used as a mouth wash in this condition:

℞. Betanaphtholis ..... gr. v 30
Sodii boratis 3vi 24
Aquæ menth. pip ..... f℥vi 180
Aquæ dest. ..... Oi 480

M. Sig.: To be used as a mouth wash.

If the gums are painful and bleeding, this is useful:

℞. Tinct. opii f3vi 24
Potass. chloratis
Sodii boratis, āā 3iiss 10
Decocti althææ radicis ..... Oi 480

M. Sig.: To be applied to gums.

Medicolegal

Exhibition of Injured Member as Affecting Record.

The Supreme Court of Indiana says, in Pittsburg, Cincinnati, Chicago & St. Louis Railway Company vs. Lightheiser, a personal injury case brought by the latter party, that, in the course of his testimony, and in explaining the character of his injury, the plaintiff exhibited his injured foot, and testified that it was stiff at the ankle joint, and by movements of the foot showed the effects of the injury on his ability to use it. The defendant railway company insisted that it was error to permit this to be done, because it was thereby deprived of its ability to present a complete record. But the court holds that the company was not deprived of any substantial right by the action of the lower court, and the record was complete. This court has previously held that such an exhibition of the injured limb was not error.

County, Not Patients, to Pay for Detention Hospital.

The Supreme Court of Iowa says, in the case of L. H. Kurtz Co. vs. Polk County, that the city council of Des Moines, acting as a board of health, undertook to provide and furnish a detention hospital in which to seclude and care for such persons in said city as might be suffering with smallpox or other contagious diseases, and, in the performance of said work, ordered from the plaintiff company materials and repairs suitable to be used therein. The board of supervisors, however, refused to allow the company's claim as a proper charge against the county. It was argued that the intention of the statute was to assess the cost of erecting, furnishing and repairing pest houses and detention hospitals to the persons who are so unfortunate as to require treatment therein, and that no liability was intended to be imposed on the county.

If such intention was clearly and explicitly expressed, and the provision were to be treated as a valid exercise of the police power of the state, the court should, of course, it says, give it effect, but, in the absence of such clear expression, the court thinks it should hesitate long before approving a construction involving the unreasonable and oppressive results which would follow an adoption of the theory of the county. To say that the board of health may buy or erect a detention hospital, supply it with a heating plant, and all the furniture and conveniences required for its proper use, and charge all the expenses thus incurred to the person or persons who may be involuntarily removed thereto for temporary care and treatment is to attribute to the legislature an intention, which this court's respect for a coördinate branch of the government forbids.

While the power and discretion conferred on boards of health are of necessity somewhat drastic and arbitrary, and, in the hands of reckless and autocratic officers, are easily made the instruments of hardship and oppression, the court regards it very clear that the statute does not contemplate any such result as the county here contended for. On the contrary, that part of section 2570a which provides for imposing a charge on the patients detained in hospital, speaks solely of "the expense incurred for the care of such persons." Given its plainest and most obvious meaning, the phrase "expenses for the care" of a sick person means only such expenses as pertain to attendance, nursing, board and treatment, and certainly not to the expense of erecting and furnishing the building in which such care is furnished.

If a sick person admitted to one of our city hospitals is received with the assurance that the charge against him will be limited to the expense incurred in his care while he remains an inmate, he could hardly be blamed for manifesting some surprise if, on being discharged, he finds the cost of erecting, heating and furnishing the hospital charged up in his bill. This court is not disposed to enlarge the apparent meaning of the statute to make possible such an inequitable result. The patient is not to be, and ought not to be, charged for any expense other than such as has been reasonably incurred in his care, giving that term its usual and ordinary signification. As to other expenses, if any, and especially expenses made in establishing and fitting up property of a permanent character which remains the property of the city or county, while the satute does not in express terms say they are to be paid by the county, the provision that they shall be certified to, and audited by, the board of supervisors clearly indicates that such was the legislative intent. Judgment for the plaintiff was right and is affirmed.

Errors Relative to Damages in Malpractice Case.

The Supreme Court of Iowa says that in the malpractice case of Albertson vs. Lewis the plaintiff had sustained a fracture of the bone of his arm, between the elbow and shoulder, on December 5. It was the allegation of the petition that the defendant, through want of skill, negligently set and treated the arm so that it became crooked and had a large lump on it, and was useless to the plaintiff; that the disfigurement so caused was permanent in its nature. As related to the subject of damage, pain and suffering, mental and physical, past and future, were alleged; also loss of time and diminished earning capacity. That the fracture was properly reduced in the first instance was not disputed in the evidence. Nor was it disputed but that down to February 25, following, at least, the subsequent treatment administered was proper in all respects. The plaintiff testified that, on the date last mentioned, the defendant took off the zinc cast in which the arm had previously been encased, and put on in place thereof a simple gauze bandage; that he then gave instructions to the plaintiff to use the arm, saying that it would gradually grow stronger. In respect to the appearance of the arm at that time the plaintiff said that he wore the bandage so put on some three or four weeks, when he took it off; that the arm "was then as crooked as it is now." The defendant, on the other hand, testified that he saw the plaintiff last on January 15, at which time he examined the arm and found the fractured ends of the bone in proper apposition; that he continued the arm in the zinc cast, and that the plaintiff did not thereafter return for further examination or treatment, as he was requested to do. The several surgeons called as witnesses on the trial agreed that an examination of the arm disclosed a case of delayed union, and that the angular deformity in the arm was caused by the fact that the broken ends of the bone were not in perfect apposition. As to the failure of the bone to reunite, it was agreed that such was due to conditions inherent in the patient himself, and not to any improper treatment on the part of the surgeon. That the imperfect apposition was due to the absence of an immovable dressing such as to secure immobilization, and the use of his arm by the plaintiff, seemed to be conceded. The surgeons, however, were not directly interrogated on that point.

It will be apparent from the foregoing statement, the court says, that negligence on the part of the defendant, if any such there was, could only be predicated on a finding of the truth of the plaintiff's contention to the effect that on February 25 a gauze bandage was substituted for the zinc cast, and that he was then directed to make use of his arm.

A physician who was witness for the plaintiff testified that, in his judgment, an operation on the plaintiff's arm called "resection" would be necessary if any better result than the plaintiff had was to be expected. Over the objections of the defendant, he was then permitted to testify as to the reasonable value of a surgeon's services in performing an operation of resection. Here was error. If there were no other reasons, the error becomes apparent when it is observed that the petition contains no allegation that, as a result of the defendant's negligence, the condition of the plaintiff's arm is such that a future operation is or will become necessary, and that the plaintiff will be put to expense on account thereof. Quite to the contrary, the petition presents the case of a fixed and permanent injury, and the demand for damages is grounded wholly on that theory. This being the state of the record, the court need not determine whether the expense incident to medical and surgical attendance should be classed as general or as special damage—a point on which there is more or less conflict in the authorities. It is sufficient to say that in any view the defendant was not called on to defend as against a claim of future damage—to accrue, if at all, as the plaintiff might elect—growing out of a matter respecting which, if the petition speaks at all on the subject, the averment is that such

an operation, and hence the attending expense, would be unavailing to afford relief and, therefore, useless.

Following the reasoning of the foregoing paragraph, it must be said that there was error in charging the jury that, in fixing the amount of the plaintiff's damage, if he was found entitled to recover, they might take into consideration "the reasonable and necessary expense for another operation or an operation on the arm in question," etc. Besides the above considerations, it was not made to appear that an operation in the future was within the contemplation of the plaintiff. That it is error to instruct on matters not within the issues, and in respect of which there has been no attempt to make proof, is fundamental doctrine. Moreover, as the case was submitted to the jury, they were authorized to find damages for a permanent injury, and also damages as for the expense incident to a possible attempt to remove the permanency of the disability and restore the arm to normal conditions.

The defendant also complained that in the charge the jury was told that, in fixing the amount of the plaintiff's damages, they might take into consideration the impairment of his health in addition to the injury sustained by him to his arm and his loss of ability to work and labor. Here also was matter wholly foreign to the pleadings and proof, and hence error.

On the subject of his physical pain the evidence for the plaintiff was confined to this simple statement: "When I work hard the arm pains me slightly at times. I do not experience any serious pain." There was nothing in the record to warrant a conclusion that such pain as he did suffer was attributable in any degree to the fact that, in growing together, the broken parts of the bone were not in perfect apposition to each other. And the imperfect apposition was the only matter appearing on which the charge of negligence could be sustained. As the matter of a possible future operation was not in the case, the pain and suffering that might be incident thereto could not, of course, be considered. There being no ground on which to base a recovery as for physical pain, such should not have been submitted to the consideration of the jury, and the submission thereof was error.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

January 12.

1 *Yellow Fever. A. E. Thayer, Galveston, Texas.
2 *Colostomy. C. B. Kelsey, New York.
3 Dementia Præcox. E. F. McCampbell, Columbus, Ohio.
4 Pes Planus from the Viewpoint of Neurology. C. P. Frischbier, Brooklyn.
5 *Hyoscin Sleep in Obstetric Practice. W. H. Birchmore, Brooklyn.
6 Working Formulas to Facilitate the Percentage Modification of Milk. C. J. Dillon, New York.

1. Yellow Fever.—While studying one case of yellow fever Thayer found a number of boat-shaped bodies in sections from the pancreas and epithelium of the small intestine. He says that from this single experience it can not be claimed, far less proved, that the ameboid bodies seen are causal in the disease. However, provisionally the name *Amœba febris flavæ* may be suggested. He believes that before such a claim can be made the following conditions should be fulfilled. The same bodies must be found in the organs of other patients with yellow fever, and early autopsy is probably important. They should be found in the blood of yellow fever patients, in all probability within the first three days of the disease, for transmission by the stegomyia occurs only during that period. They must be found under some guise in the tissues of mosquitoes known to be infected. More than one observer in different parts of the world should find and identify them. They should be cultivated. All these conditions apply to fresh cases of the disease and to infected mosquitoes.

2. Colostomy.—Kelsey is thoroughly convinced of the great benefits of colostomy in many cases. The incision he now makes is half the length of the former one, and is gridironed, as in appendicitis. Muscles are separated as far as possible, and fibers cut as little as possible. In the temporary operation the sutures are passed through the edges of the abdominal incision, the parietal peritoneum, and the wall of the gut. In the permanent operation care should be taken not to include the parietal peritoneum in the suture. In making an opening into the sigmoid it should be made as high up as possible to avoid prolapse, and in the cecum it should be made as far as possible from the valve. The operation for an artificial anus may as well be completed at the time as to wait several days before the gut is opened.

5. Hyoscin Anesthesia in Obstetric Practice.—Birchmore believes for the accoucher that hyoscin is the ideal anesthetic. It gives all the aid in quieting the patient that any narcotic can give, while in addition it affords a practical anesthesia of prolonged duration without risk to either mother or child. This anesthetic sleep is without danger.

New York Medical Journal.

January 12.

7 *Certain Diseases of the Peritoneum. J. G. Mumford, Boston.
8 *Pathogenesis of Facial Hemiatrophy. A. Gordon, Philadelphia.
9 *Bone Syphilis, Hereditary and Acquired. R. W. Taylor, New York.
10 Excision of the Wrist. J. S. Wright, Brooklyn, N. Y.
11 *Melanosarcoma of the Eye (Primary) and of the Liver (Secondary). M. I. Schoenberg and C. N. B. Camac, New York.
12 *New Operation for the Correction of Malformations About the Nasal Lobule. F. S. Kolle, New York.
13 The Insanity of Inebriety. T. D. Crothers, Hartford, Conn.
14 The Untrained Nurse; Her Legitimate Field and Her Opportunity for Self-Improvement. J. H. Wiggins, Jamestown, N. Y.

7. Diseases of Peritoneum.—Mumford reviews the present-day knowledge of diseases of the peritoneum but does not offer anything new.

8. Pathogenesis of Facial Hemiatrophy.—Gordon concludes that hemiatrophy of the face may be caused by the lower sympathetic ganglion with its nerve, by the fifth nerve, by the Gasserian ganglion, finally by a central lesion. The tendency of some writers to attribute Romberg's trophoneurosis exclusively to the sympathetic nerve fibers, he says, is erroneous.

9. Bone Syphilis.—Taylor says that in the treatment of bone syphilis energetic treatment is urgently called for. While in general potassium iodid is of vital importance, it must be remembered that in these cases there is a necessity for the combined use of mercury with the iodid. In most cases a more prompt result will follow the combination treatment, and the patient will be spared the massive doses of the iodid which are so trying to the stomach, and often so depressing to the mind and system. The local vigorous use of mercurial ointment should never be forgotten in conjunction with internal medication. In many cases the combined use of the iodid with hypodermic injections of some active, soluble mercurial preparation will be attended with conspicuously beneficial results.

11. Melanosarcoma of Eye and Liver.—The striking features of Schoenberg's case are: 1. Failing vision two years before hepatic involvement. 2. Ocular pain and progressively failing vision one and three-quarters years before hepatic involvement. 3. Clinical diagnosis, glaucoma; pathologic diagnosis, melanosarcoma. 4. Abdominal pain and mass in a patient with extirpated eye; no eye symptoms at this time. 5. No jaundice. 6. No ascites. 7. No hematemesis or melena. 8. No varicosity of the veins of the abdomen or extremities. 9. No abdominal pains except at a very early stage and though these were severe they resembled an attack of indigestion. 10. The sudden appearance of the tumor, the rapid development up to a certain size, beyond which it did not go throughout the subsequent course of the disease. 11. Urine turning black and yielding melanin reaction. The patient died about two and one-quarter years after the onset of the eye symptoms, and two and one-half months after the onset of abdominal symptoms.

12. Correction of Malformations About Nasal Lobule.—The operation described by Kolle is said to apply particularly to the correction or reduction of an over prominent nasal tip due to an excessive growth or congenital malformation of that part of the nose, giving the organ undue prominence and a hook-like appearance usually associated with a narrow, sharply upward inclined upper lip. The same operation, on a larger scale, can

be readily employed for the correction of hyperplasia nasi and rhinophyma. The method leaves no scar whatever except for a slight white line across the columna of the nose where it is out of view and when contracted offers no objection on the part of the hypercritical patient. The frequent references in the text to diagnosis prohibit abstracting the method of operating.

Boston Medical and Surgical Journal.

January 10.

15 *Renal and Ureteral Hematuria. A. L. Chute, Boston.
16 *Cancer of the Uterus, Patient Alive and Well Six Years After Panhysterectomy. F. Cobb, Boston.
17 *Surgical Aspects of Bronchiectasis, Particularly in Children and Young Adults. C. G. Cumston, Boston.
18 *Carcinoma of the Appendix, Probably Primary. N. R. Mason and L. J. Rhea, Boston.

15. Renal and Ureteral Hematuria.—Chute says that there is but one way to distinguish definitely between a hematuria of the upper urinary tract and one of bladder origin. That is by means of cystoscopy—simple inspection of the ureteral orifices in some cases, combined with catheterization of the ureters in others. It is possible to distinguish between a hematuria of ureteral origin and one of renal origin by passing a ureteral catheter and noting if the urine from the kidney pelvis is bloody as well as that from low in the ureter. In a large proportion of the cases of renal hematuria an accurate diagnosis of the bleeding can be made by means of a careful consideration of the symptoms combined with an accurate examination of the patient and study of the urine.

16. Cancer of Uterus.—The case reported by Cobb was one of squamous cell cancer in the beginning of the second stage of its growth, the stage of papillary overgrowth with necrosis and foul discharge. A panhysterectomy was done. The second operation, done five and one-half years after the hysterectomy for a ventral hernia, furnished an unusual opportunity to prove by inspection and palpation of the peritoneal cavity entire freedom from recurrence of malignant disease.

17. Surgical Aspects of Bronchiectasis.—Cumston says that if ordinary medical treatment, carefully applied and continued for some time, remains ineffectual, then resection of the ribs should be seriously considered. His experience in resection of the ribs for bronchiectasis in children is limited to two instances, but the results obtained were excellent.

18. Carcinoma of Vermiform Appendix.—Mason and Rhea report a case of scirrhous carcinoma originating either from the epithelium at the tip of the appendix or as a metastasis from a primary growth somewhere else in the body. The reasons urged for considering this a primary tumor of the appendix are the following: 1. Evidently the tumor arose from epithelial cells which have spread peripherally and longitudinally and infiltrated the muscle coats of the appendix. 2. The new growth is sharply limited by the serous coat of the appendix. 3. Clinically there is no evidence of a tumor elsewhere in the body. 4. The tumor is of the slow growing scirrhous type which has been demonstrated to be primary in the appendix. 5. The appendix is an unusual place for metastases to take place.

Lancet-Clinic, Cincinnati.

January 5.

19 Tuberculosis, a Personal Appeal. W. Porter, St. Louis.
20 Hygiene, Prophylaxis and Calisthenics as Practiced in the Public Schools of Cincinnati. L. Bloom, Cincinnati.

January 12.

21 *Migraine. C. S. Chamberlin, Cincinnati.
22 President's Address, Ohio Valley Medical Association. D. M. Griffith, Owensboro.

21.—See abstract in THE JOURNAL, Nov. 24, 1906, page 1761.

St. Louis Medical Review.

January 5.

23 Lorenz Heister. F. J. Lutz, St. Louis.
24 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Louis.

American Journal of Medical Sciences, Philadelphia.

January.

25 Principles Underlying the Surgery of the Stomach and Associated Viscera. W. J. Mayo, Rochester, Minn.
26 *Paravertebral Triangle of Dulness in Pleural Effusion (Grocco's Sign). W. S. Thayer and M. Fabyan, Baltimore.
27 *Adams-Stokes Disease (Heart-Block) Due to a Gumma in the Interventricular Septum. T. G. Ashton, G. W. Norris and R. S. Lavenson, Philadelphia.
28 *Pathologic Physiology of Chronic Arterial Hypertension and Its Treatment. T. C. Janeway, New York.
29 Inorganic Late Systolic Pulmonary Murmurs in Infancy and Childhood. S. McC. Hamill and T. Le Boutillier, Philadelphia.
30 *Paroxysmal Irregularity of the Heart and Auricular Fibrillation. A. R. Cushny, London, and C. W. Edmunds, Ann Arbor.
31 Hemochromatosis with Diabetes Mellitus. T. B. Futcher, Baltimore.
32 *Acute Pulmonary Edema. D. Riesman, Philadelphia.
33 *Nature of Aplastic Anemia and Its Relation to Other Anemias. R. S. Lavenson, Philadelphia.
34 Natural and Artificial Inhibition of Peptic Digestion. J. Sailer and C. B. Farr, Philadelphia.
35 Acute Unilateral Septic Pyelonephritis. D. N. Eisendrath, Chicago.
36 Gastric Ulcer in Childhood. H. Adler, Baltimore.

26. Grocco's Sign in Pleural Effusion.—This article will be reviewed editorially.

27.—See abstract in THE JOURNAL, Dec. 8, 1906, page 1944.

28. Chronic Arterial Hypertension.—Janeway declares that the height of the blood pressure gives no indications whatever for treatment, except along preventive lines. Hypertension is no more to be attacked therapeutically than is a heart murmur. Only those symptoms which point unmistakably to inadequate maintenance of the circulation, or to sudden threatening of danger, give the signal to interfere.

30. Paroxysmal Irregularity of Heart.—A case of paroxysmal arrhythmia, with marked acceleration of the heart, is described by Cushny and Edmunds, and it is shown that the irregularity is due to irregular discharge of impulses and not to defects in the contraction of the ventricle which appears to respond to the impulses received. A similar form of irregularity in the dog's heart is described, and it is shown that this is due to the ventricles receiving irregular stimuli from the auricle which is in the state of fibrillation. This form of arrhythmia is shown to occur in dogs occasionally from peripheral irritation and it is probable that this gives rise to reflex inhibition of the vagus center which, acting on an abnormal heart, causes auricular fibrillation. The suggestion is made that in the patient described and in other cases of paroxysmal arrhythmia the condition is due to auricular fibrillation from inhibition of the vagus center.

32. Acute Pulmonary Edema.—The edema of the lungs to which Riesman calls attention is not that so commonly seen in the period of lost compensation of valvular or muscular heart disease, in cachectic states, in grave infectious diseases, or in acute or chronic nephritis in the terminal phase. It bears no relation to subcutaneous dropsy, and in typical cases is not associated with it. Recovery from an attack is frequent, but there is a striking tendency to recurrence, subsequent attacks being similar to the first. They set in suddenly, usually at night, and place the patient's life in jeopardy. The clinical causes are various; arteriosclerosis and cardiac and renal disease are most important. The pathogenesis is obscure; vasomotor disturbances and a disproportionate activity of the two ventricles (the right predominating) are the chief factors. The chief symptoms are agonizing dyspnea, cyanosis, cough, expectoration of frothy albuminous fluid, and profound prostration. Over the lungs, often more over the upper than the lower portions, the characteristic moist râles of edema are heard. The most valuable remedies are bleeding, dry cupping and cardiac stimulants.

33. Aplastic Anemia.—According to Lavenson, the essential features of aplastic anemia which is a variety of progressive pernicious anemia are: A rapidly fatal course; a marked reduction in the number of red blood corpuscles; a greater proportionate reduction in the amount of hemoglobin, resulting in a low color index; a leucopenia with a relative lymphocytosis; an absence of megaloblasts, and usually normoblasts. Postmortem, the characteristic finding is pale bone marrow in which the signs of erythrocytic and granulated leucocytic formation are wanting. The differences between aplastic anemia and the usual form of progressive pernicious anemias result entirely from the absence of regenerative processes in the former. The blood picture in aplastic anemia is the result of two factors, one the hemocytolysis and the other the failure of regeneration on the part of the bone marrow. The

failure of regeneration of the blood elements of the bone marrow represents the result of one of the three following conditions: (a) A simple deficiency of the regenerative powers; (b) an inhibitive action on the bone marrow by the factors producing the destruction of the blood elements, and (c) a true aplasia of the bone marrow. If there be a true aplasia it is probably of recent origin, for if it were of long duration in all probability there would have been manifestations of a deficiency in blood formation before the advent of the hemolytic agent. The relations of lymphocytes to leucocytes and red blood corpuscles in aplastic anemia lends evidence to the view that lymphocytes are not a specific product of the bone marrow. Lavenson reports one case.

American Journal of Surgery, New York.

January.

37 *Choice of Procedure in Cases of Loose Kidney. R. T. Morris, New York.
38 Blood Examination in Surgical Diagnosis. I. S. Wile, New York City.
39 Undescended Testicle. R. A. Barr, Nashville, Tenn.
40 Local Anesthesia in Rectal Work. J. M. Lynch, New York City.
41 Treatment of Lateral Curvature. C. R. Keppler, New York.
42 Stamping Out Hereditary Diseases by Sterilizing the Sexes. M. E. Van Meter, San Francisco.
43 *Fatal Case of Hydrochloric Acid Poisoning. J. L. Wollheim, New York.

37. **Nephropexy.**—Morris' operation includes the method of Goelet, who suspends the kidney by a kangaroo tendon suture entering the lower pole of the organ, and is carried alongside the dorsum for half the length of the kidney, then across to the other side, then down and out near the point of entrance. The two loose ends are made fast to any convenient muscular attachment. The next point in the combination includes the ideas of Senn and of Longyear. The lower pole of the kidney is packed with iodoformized gauze in such a way that the retroperitoneal pouch is distended. Gauze in a narrow strip is employed, and one end of the strip is left outside of the wound. The sheath of the quadratus lumborum muscle alone is sutured, and that allows good approximation of deeper structures. The skin is sutured with the exception of just enough room for the loose end of gauze. The fatty capsule of the kidney is trimmed and the fibrous capsule is split along the dorsum in order to give relief from the immediate inflammatory tension. At the end of a week the iodoformized gauze is removed, and no further attention is required except change of outer dressings for neatness. The patients are allowed to get out of bed at the end of 14 days, as a rule. The suture hangs up the kidney in a simple way. The gauze acts as a drain at first, and then causes the formation of granulation tissue, so that the secondary adhesion obliterates the retroperitoneal pouch and fixes the nephrocolic ligament. The instruments used for the operation are a pair of scissors and a needle. It is not necessary to tie any vessels. Avoidance of deep suturing obviates the danger of catching the lumbo-gluteal nerve where it would get pinched.

43. **Hydrochloric Acid Poisoning.**—Wollheim's patient swallowed about an ounce and a half of concentrated hydrochloric acid. She was promptly given milk by members of her family, and vomited this at once in very large curds. She then complained of severe pain in the mouth and throat, and along the esophagus, and severe gastric and abdominal pain. Twenty-five minutes after the accident there was administered at once the only alkali handy, sodium bicarbonate, ad. lib., in solution, and lavage of the stomach was done. About one ounce of sodium bicarbonate, dissolved in one quart of water, was poured into the stomach through the tube, but it could not be withdrawn by syphonage or the pump. On withdrawal of the tube it was found plugged with thick, ropy mucus. Another attempt to wash out the stomach was futile, either because of the large quantities of mucus present or possibly because of perforation of the stomach due to the acid. The patient was given apomorphin hydrochlorid, gr. 1/10, hypodermatically, and this having failed to produce emesis in five minutes, the dose was then repeated, also without effect. The patient, still conscious and complaining bitterly of pain in the mouth, throat and abdomen, was given hypodermatically morphin sulphate, gr. 1/4, and atropin sulphate, gr. 1/100; and more sodium bicarbonate was administered. At this time she complained bitterly of thirst, mucus was flowing freely from her mouth, and swallowing was difficult and painful. In spite of all efforts at stimulation—strychnin, atropin and whisky hypodermatically, and saline enemata—the patient went into collapse. This was about one hour and a half after taking the acid. She developed pulmonary edema and died of respiratory failure about five hours after the fatal draught.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

January 1.

44 *Cancer of the Breast. J. C. Stewart, Minneapolis.
45 Combined Drainage in Rupture of the Urethra. H. P. Ritchie, St. Paul.
46 Diet for the Tuberculous in the St. Peter State Hospital. W. H. Darling, St. Peter, Minn.
47 Orchitis Complicating Mumps. T. Lowe, Pipestone.

44. **Cancer of Breast.**—Stewart thinks that cases of cancer of the breast are neglected and badly advised because many of the profession do not admit, or do not know, the facts as to the curability of this disease by operation. The only remedy is a campaign of education among both the profession and the laity. All tumors in the breasts of women over 30 should be considered and treated as cancer until proved benign. Incomplete operations, except for palliation, are criminal. Well-performed radical operations save, certainly, 25 per cent of the victims of this dread disease.

Chicago Medical Recorder.

December 15.

48 *Prevalence of Leprosy in the United States and the Policy to be Pursued with Regard to It. W. A. Pusey, Chicago.
49 Organic Heart Disease and Immunity from Pulmonary Tuberculosis. B. Stow, New York City.
50 Syringomyelia with Involvement of Cranial Nerves. A. Church, Chicago.
51 Prolapse of Rectum. C. J. Drueck, Chicago.
52 Treatment of Salpingitis. L. J. Pritzker, Chicago
53 Points in the Anatomy of the Temporal Bone to be Considered in Connection with Mastoditis Following Acute Suppurative Otitis Media. J. Holinger, Chicago.
54 Suppurative Thrombophlebitis of the Iliac Vein. Atresia and Vesicalis et Recti. C. E. Beck, Chicago.

48.—See THE JOURNAL, Dec. 8, 1906, page 1945.

Journal of the South Carolina Medical Association, Greenville.

December 21.

55 End Results in Conservative Work on Ovaries. R. S. Cathcart, Charleston.
56 Should There be a Division of Fees? C. B. Earle, Greenville.
57 Head Injuries. L. Guerry, Columbia.
58 Relation of the Doctor to the Druggist. T. G. Croft, Aiken.

Western Medical Review, Lincoln.

December.

59 Rational Treatment of Neurasthenia. H. D. Singer, Omaha.
60 Necessity for Early Diagnosis in Cancer of the Uterus. C. O. Rich, Omaha.
61 Mastoid Operation Followed by Death from Hemorrhage on the Ninth Day. M. H. Garten, Lincoln.

Journal of the New Mexico Medical Association, Albuquerque.

December 15.

62 Gastroenterostomy for Gastric and Duodenal Ulcer. B. D. Black, Las Vegas.
63 Is Tuberculosis Preventable? M. K. Wylder, Albuquerque.
64 Suggestions as to Diseases of the Eye. W. G. Shadrach, Albuquerque.
65 Treatment of Extensive Burns of the Second Degree. W. H. Burr, Gallup, N. M.
66 Pneumonia. W. W. Spargo, Albuquerque.

Columbus Medical Journal.

December.

67 Post Operative Complications. F. F. Lawrence, Columbus.
68 Practical Use of the Cystoscope. S. S. Wilcox, Columbus.
69 Sterility in the Male. T. E. Courtright, Columbus.

Journal of the Outdoor Life, Saranac Lake, N. Y.

December.

70 Personal Hygiene. J. W. Heffron, Syracuse, N. Y.
71 The Sanatorium an Educator. J. H. Elliott, Gravenhurst, Ontario.
72 "Patent Medicine" Cures. E. F. L. Jenner, Digby, N. S.

Canada Lancet, Toronto.

December.

73 Echoes from St. Mary's Clinic, Rochester, Minn. E. A. Hall, Victoria, B. C.
74 Surgery of the Kidney and Ureter. W. J. Mayo, Rochester.
75 The Trained Nurse and Her Influence in the Community. S. M. Hay, Toronto.
76 The Topography of the Chest. E. Seaborn, London.

Montreal Medical Journal.

December.

77 Absorption of Fats in Infants. T. P. Shaw and A. L. C. Gilday, Montreal.
78 Tetanus Following Vaccination. F. R. England, Montreal.
79 Tetanus Followed by Recovery. A. Cumming, Montreal.

80 Tetanus Followed by Death. A. E. Garrow, Montreal.
81 Pubiotomy. D. J. Evans, Montreal.
82 Congenital Dislocation of the Humerus. A. M. Forbes, E. H. White and C. H. Russel, Montreal.
83 Perforation of the Stomach. I. Olmsted, Hamilton.

Medical Standard, Chicago.

December.

84 Can Women Escape Pain in Parturition? M. O. Terry, Mamaroneck, N. Y.
85 Treatment of Arteriosclerosis. G. F. Butler, Chicago.
86 General Treatment of Splanchnoptosia. B. Robinson, Chicago.
87 Practical X-Ray Therapy. N. M. Eberhart, Chicago.
88 German Gynecology. L. Waite, Chicago.

Journal of Cutaneous Diseases, New York.

December.

89 Dermatitis Vegetans in Its Relation to Dermatitis Herpetiformis. J. A. Fordyce and W. S. Gottheil, New York.
90 Vegetating Dermatoses. W. A. Pusey, Chicago.
91 Syphilis and Epithelioma of the Tongue. D. W. Montgomery and H. M. Sherman, San Francisco.

Annals of Otology, Rhinology and Laryngology, St. Louis.

December.

(FRAENKEL FESTSCHRIFT NUMBER.)

93 Bernhard Fraenkel—What He Has Done for Rhinolaryngology. W. Freudenthal, New York.
94 Bernhard Fraenkel's Contributions to Medical Literature. W. Freudenthal, New York, and Landgraff, Beizig.
95 Diseases of the Trachea, Anomalies, Hemorrhage, Inflammations and Infections. J. E. Newcomb, New York.
96 Tumors of the Trachea. C. F. Thiesen, Albany.
97 Stenosis of the Trachea. W. K. Simpson, New York.
98 Foreign Bodies in the Trachea and Tracheoscopy. A. Coolidge, Jr., Boston.
99 Anatomy of the Accessory Cavities of the Nose Studied by Topographic Projections. H. W. Loeb, St. Louis.
100 *Function of the Accessory Cavities of the Nose. J. M. Ingersoll, Cleveland.
101 General Pathologic Processes Associated with or Following Infections of the Accessory Sinuses. D. B. Kyle, Philadelphia.
102 Gastroscopy. C. Jackson, Pittsburg, Pa.
103 Congenital Laryngeal Stridor. A. L. Turner, Edinburgh.
104 Channels of Infection in Tuberculosis. J. W. Gleitsmann, New York.
105 Sarcoma of the Nose; Spontaneous Disappearance of Malignant Growths. R. Levy, Denver.
106 *Middle-Ear Suppuration as Etiologic Factor in Retropharyngeal Abscess. E. M. Holmes, Boston.
107 Qualities of the Sense of Smell. H. Zwaardemaker, Utrecht.
108 Early History of Laryngology in America. T. J. Harris, New York.
109 Reminiscences. E. Cutter, West Falmouth, Mass.
110 Etiology of Atrophic Rhinitis. J. Sendziak, Warsaw.
111 Laryngeal Disturbances Produced by Voice Use. W. E. Casselberry, Chicago.
112 Removal of Adenoid Vegetations Through the Nasal Passages by a New Method. O. T. Freer, Chicago.
113 President's Address. Am. L., R. and Ot. Soc. J. E. Logan, Kansas City.
114 Diffuse Hyperplastic Laryngitis and Pharyngitis of Congenital Syphilis. A. B. Kelly, Glasgow.
115 Cough in Diseases of the Recurrent Nerve. G. Ferreri, Rome.
116 Differential Diagnosis of Certain Malignant Diseases of the Lymphoid Tissue of the Throat. J. L. Goodale, Boston.
117 Malignant Disease of the Tongue. J. H. Bryan, Washington.
118 Treatment After the Radical Operation for Chronic Suppurative Frontal Antritis. H. Luc, Paris.
119 How Far are Abnormalities of the Nasal Septum Responsible for Mal-Function of the Nose? H. L. Swain, New Haven.
120 Skiagraphy in the Diagnosis of Frontal Sinusitis. W. A. Chisholm, New York.
121 Nasopharynx and Throat in the Deaf Mute. J. K. Love, Glasgow.
122 Persistent Unilateral Headache, Due to Nevoid Changes in the Bone of the Middle Turbinal Body. W. Wingrave, London.
123 Etiology of Hyperkeratosis of the Tonsils. G. B. Wood, Philadelphia.
124 Laryngeal Phlegmon. N. H. Pierce, Chicago.
125 *Cause of Vocal Nodules. F. E. Miller, New York.
126 *Carcinoma of the Larynx. C. W. Richardson, Washington.
127 Clinical Anatomy of the Tonsil. W. L. Ballenger, Chicago.
128 Submucous Resection of the Nasal Septum by the Open Method. J. E. Rhodes, Chicago.
129 Catheterization Treatment of Acute Frontal Sinus Inflammations by the Internal Method. H. Curtis, New York.
130 Permanence of Improvement in the Shape of the Nose Obtained by the Subcutaneous Injection of Hard Paraffin. W. Downie, Glasgow.
131 Submucous Resection of Triangular Cartilage. R. Lake, London.
132 Multiple Recurring Papillomata of the Larynx. C. W. Richardson, Washington.
133 Results of Operation in Sarcoma of the Nose. J. Price-Brown, Toronto.
134 *Two Cases of Stammering, Illustrating the Importance of Early Treatment. G. Hudson-Makuen, Philadelphia.
135 Violent Epistaxis in a Gouty Patient. A. Trifiletti, Naples.
136 Importance of Diseases of the Nose in Treatment of the So-called Scrofulous Diseases of the Eye. C. Ziem, Danzig.
137 Nasal Operations. J. Baratoux, Paris.
138 Pseudo-Frontal Sinusitis. V. Delsaux, Brussels.
139 Intercrico-Thyroid Tracheotomy and Decanulation. E. J. Moure, Bourdeaux.
140 Treatment of Synechia of the Pharynx. E. J. Bernstein, Kalamazoo, Mich.
141 New Self-Retaining Nasal Speculum. J. H. Allen, Portland, Maine.

100, 106, 125, 126.—See THE JOURNAL, July 21, 1906, page 229.

134.—See THE JOURNAL, July 28, 1906, page 299.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

December 29.

1 Conditions of Eyesight Required for Military Service. A. Lawson.
2 Visual Tests for Railway and Marine Service. C. H. Williams.
3 Forms of Choroiditis Resembling the Well-Known Syphilitic Type. C. Stedman.
4 Death and Blindness from Wood-Alcohol Poisoning. C. A. Wood.
5 Sympathetic Ophthalmia. G. H. Burnham.
6 Preventive Treatment of Sympathetic Ophthalmia. A. Lawson.
7 Transferred Ophthalmitis; Sympathetic Irritation; Sympathetic Ophthalmia. C. A. Oliver.
8 Sympathetic Degeneration. A. F. Fergus.
9 Sympathetic Ophthalmia, Following Mules's Operation and Ending in Recovery. W. G. M. Byers.
10 Phlegmon of the Orbit, Simulating a Malignant Growth and Its Origin from the Ethmoid Cells. D. Roy.
11 Eyesight in Relation to Compensation. F. Fergus.
12 Affections of the Lachrymal Passages. A. B. Osborne.

The Lancet, London.

December 29.

13 *Treatment of General Peritonitis. A. W. M. Robson.
14 Cyanosis, General and Local. T. Oliver.
15 *Pathologic Considerations of Extrauterine Pregnancy. S. J. M. Cameron.

13. Treatment of General Peritonitis.—An extended experience in cases of acute general peritonitis from various causes has convinced Robson of the value of a treatment, the salient points of which are: 1, The removal or repair of the cause with or without irrigation of the peritoneal cavity; 2, drainage of the site of operation by a split rubber tube containing a strip of gauze and of the peritoneal cavity by a tube in the pelvis, assisted by the reclining posture, which he has for years advocated after all abdominal operations; 3, rapidity of operation; 4, avoidance of unnecessary exposure and handling of the viscera; 5, the prevention of shock; 6, the free administration of saline fluid by the rectum; 7, rectal alimentation and the stoppage for a time of mouth feeding; and 8, the avoidance of opium and sometimes the administration of repeated small doses of calomel subsequently to operation.

15. Extrauterine Pregnancy.—Cameron reports a case of twin pregnancy in one Fallopian tube. The patient had a history of seven weeks' amenorrhea and had been seized with sudden abdominal pain. When seen she was evidently in grave peril. From the signs and symptoms rupture of a gravid right tube was diagnosed, and as hemorrhage was evidently continuing, Cameron opened the abdomen without delay. The peritoneal cavity contained a great quantity of blood, which was for the most part in a fluid state. There was no rough, torn surface on the tube ploughed up by hemorrhage; the blood came from a spouting vessel on the posterior wall, and the tips of a group of villi projecting above the level of the peritoneal coat into the abdominal cavity. The tube contained a perfect twin pregnancy. The umbilical cords arose very close together and each fetus had a complete amnion.

Journal of Tropical Medicine, London.

December 15.

16 Rodent Ulcer in a Nubian Woman. A. Balfour.
17 A Blood-Sucking Hemipteron. H. H. King.
18 Dengue in Egypt. L. Phillips.
19 Vomiting Sickness of Jamaica. C. W. Branch.

The Practitioner, London.

December.

20 Cancer of the Stomach. W. H. White.
21 Distribution and Treatment of Cancer at the Angle of the Mouth. G. L. Cheatle.
22 *Treatment of Bronchiectasis. A. Chaplin.
23 Urinary Excretion in Bright's Disease. F. A. Bainbridge.
24 Serum Therapy. W. D. Emery.
25 Intussusception in Infants. C. H. Fagge.
26 Physical Methods of Treating Heart Disease. A. G. Bennett.
27 Recent Work on Typhoid Fever. C. B. Ker.
28 Etiology of Typhoid Fever. J. T. C. Nash.
29 Immediate Suture of Ruptured Perineum. S. Sheill.

22. Treatment of Bronchiectasis.—For the past five years Chaplin has adopted the plan of submitting all patients to the creosote treatment, whether fetor was present or not, and

the results have been most gratifying. Many of these patients during that period have shown no tendency to develop fetor, although the stage of their complaint was such as to lead one to expect the onset of this symptom. Chaplin says, therefore, that it may reasonably be supposed that if the practice of giving the patients periodic sittings in the creosote chamber were systematically carried out the most dangerous symptom of the complaint might, in a great measure, be obviated and the life of the patient thereby prolonged.

Intercolonial Medical Journal of Australasia, Melbourne.

October 20.

30 Evolution of Insanity. R. Jones.
31 Severe Injuries of the Urinary Organs. F. D. Bird.
32 Use and Abuse of Pessaries. H. C. Lloyd.
33 Spinal Analgesia. B. T. Zwar.
34 An Interesting Case of Head Injury. G. Owen.
35 Thrombosis of Mesenteric Veins. A. H. Brown.
36 Case of Subacute Combined Sclerosis of the Spinal Cord. R. R. Stawell.
37 Tumor of the Brain—Double Optic Neuritis—Trephining—Death. H. Laurie.
38 Treatment of Hemorrhage After Removal of Postnasal Adenoids. J. W. Barrett and W. F. Orr.
39 Value of the Transillumination Test in Empyema of the Maxillary Antrum. J. W. Barrett and W. F. Orr.

Glasgow Medical Journal.

December.

40 Case of Enteric Fever in which the Action of Typhoid Virus was Directed to the Kidney (Nephro-Typhoid). A. Napier and R. M. Buchanan.
41 Account of Five Cases of Pyelitis in Enteric Fever. J. Brown-Lee.
42 Supplementary Lobe of the Liver Causing Symptoms of Pyloric Obstruction. J. A. Adams.
43 Typhoid Spine. A. Love.

Australasian Medical Gazette, Sydney.

October 20.

44 Early Recognition of Malignant Disease. H. C. Hinder.
45 Radical Method of Extirpating Malignant Growths in the Neck, Secondary to Mouth Carcinoma. H. L. Maitland.
46 Two Cases of Bullet Wounds of the Head and Ocular Symptoms Connected Therewith. T. K. Hamilton.
47 The Urethroscope. W. R. Fox.
48 *Polycythemia and Chronic Cyanosis without Splenic Enlargement. C. Reissmann.
49 *Parotitis During Dysentery. P. Bollen.
50 Intermittent Nasal Obstruction. G. L'Estrange.
51 *Foreign Body Forced into Intestine Through the Vagina. T. G. Wilson.

48. Polycythemia and Chronic Cyanosis without Splenic Enlargement.—The principal features in the case reported by Reissmann were a chronic cyanosis and enlargement of the liver occurring in a girl 18 years of age. The symptoms at first were those of a tumor in the mediastinum. A more or less acute illness was preceded by attacks of unconsciousness and followed by vomiting, diarrhea, headaches and giddiness, drowsiness, signs of venous obstruction in the chest and leg, hemoptysis, a great increase in the number of red cells in the blood, increased coagulability of the blood and an increased excretion of chromogens in the urine. The spleen could not be felt below the margin of the ribs.

49. Parotitis in Dysentery.—Bollen reports what he considers a bona fide case of parotitis occurring during the course of a dysentery. The complication yielded promptly to hot applications.

51. Foreign Body Forced into Intestine Through Vagina.—Wilson reports the case of a woman who six years previously, thinking she was pregnant, had introduced a crochet hook into the vagina and failed to recover it. No bleeding followed. When Wilson first saw her the uterus was found retroflexed, but with a certain degree of mobility; to the right there was a hard mass, low down in the lateral fornix, which was tender to palpation. The diagnosis of right adnexal inflammation, with possibly involvement of the appendix, was made, and operation was advised. On opening the abdomen this mass was found to be thickened omentum, densely adherent round the appendix, the tip of which was adherent to the posterior surface of the broad ligament. The uterus was retroflexed, but both tubes and ovaries, except for some congestion, were normal. A foreign body, corresponding to a crochet hook, was felt, apparently in the ascending colon. The lower end of the ileum was found adherent below to the posterior surface of the broad ligament, and at the opposite side of its circumference this coil of bowel was densely adherent to the lower end of the ascending colon, and between these two coils of bowel a small dense cartilaginous ring could be felt, giving the impression of an artificial anastomosis between these coils of bowel. On separating the adhesions of ileum below, a small hole was found in the bowel, and the communication between the ileum and the ascending colon could be demonstrated. The crochet hook was an ordinary bone one, 5½ inches long, and mottled in appearance from the fecal staining. The crochet hook had been pushed up through the lateral fornix and had perforated both sides of the coil of ileum and had been forced into the ascending colon. It had probably remained in this position long enough for a fistula to be formed between these two coils of gut, and had later worked its way entirely into the ascending colon, where it was found with its sharp end pointing upward under the liver.

Beiträge z. klinischen Chirurgie, von Bruns', Tübingen.

Last indexed, page 269.

52 (L, No. 1, Pp. 1-463.) Spontaneous Fracture as Early Symptom of Fibrous Ostitis. M. von Brunn. (Früh-symptom der Ostitis fibrosa.)
53 Fractures in Roentgen Picture. Id. (Beurteilung von Frakt. im R.-Bilde.)
54 *Traumatic Aneurisms from Bullet Wounds. Z. Kikuzi. (Traum. An. bei Schusswunden.)
55 *Subcutaneous Injuries of Ureter. C. Blauel. (Subkut. Ureterverletzungen.)
56 Fixation of Thyroid Gland. Id. (Zur Exothyreopexie.)
57 *Fate of Silver Wire Suture of Fractured Patella. M. von Brunn. (Schicksal des Silberdrahtes bei der Naht der gebrochenen Pat.)
58 *Sarcomata of Long Bones. O. Kocher. (Sarkome der langen Röhrenknochen.)
59 Six Cases of Metastatic Paranephritic Abscesses. W. Albrecht. (Met. paranephr. Abszesse.)
60 *Remote Results of Excision of Umbilicus for Hernia. R. Krauss. (Omphalektomie bei Nabelbrüchen.)
61 *Removal of Spleen After Traumatic Rupture. W. Hörz. (Splenektomie bei traum. Milzruptur.)
62 Remote Results of Operative Treatment of Mammary Tuberculosis. E. Braendle. (Tub. der Brustdrüse.)
63 Primary Tuberculosis of Shafts of Long Bones. Zumsteeg. (Prim. Diaphysentub. langer Röhrenknochen.)
64 Fractures at Upper End of Tibia. O. Sonntag. (Frakt. am oberen Ende der Tibia.)
65 Successful Roentgen Treatment of Case of Symmetrical Affection of Lachrymal and Salivary Glands. C. Pfeiffer. (R.-Therapie der sym. Thränen- und Speicheldrüsenerkrankung.)
66 *Results of Roentgen Treatment of Malignant Lymphomata. Id. (R.-Behandlung der mal. Lymphome.)
67 Roentgen Diagnosis of Bronchiectasia. Id. (Diagnose der Bronchiektasien im R.-Bilde.)
68 Green-stick Fractures in Leg Bones. P. Müller. (Biegungsbrüche an den langen Röhrenknochen der unteren Extremität.)
69 *Operative Treatment of Incarcerated Hernia of Diaphragm. Vayhinger. (Zur Op. incarc. Zwerchfellhernien.)
70 Functional Results of Amputation of Leg Below the Knee. A. Reich. (Nachuntersuchungen über die Gebrauchsfähigkeit der Amputations-Stümpfe des Unterschenkels.)

54. Traumatic Aneurism from Bullet Wounds.—Kikuzi reviews his experience with 85 cases. Various arteries were involved, including the subclavian and axillary. When the tourniquet can be applied temporarily he advocates a method of intracapsular ligation of the injured vessel which much facilitates the operation and renders general anesthesia unnecessary, while the danger of subsequent gangrene is much reduced.

55. Subcutaneous Injuries of the Ureter.—Blauel adds another to the 11 cases on record of injury of the ureter from contusion without external wound. An operation was undertaken in 8 of the 12 cases, including puncture of hydronephrosis in 1 case, evacuation of the retroperitoneal effusion with nephrectomy later in 3, laparotomy in 1, suprapubic incision in 1, and in another a plastic operation on the ureter with subsequent nephrectomy. Seven of the 12 patients succumbed to the effects of the injury, 2 from shock and 3 from peritonitis. There are no pathognomonic signs of injury of the ureter at first. Acute hydronephrosis or a tumor from escape of the urine through the injured ureter are important signs later. Cystoscopy revealed the injury in 2 of the cases, and it should never be omitted in case of a dubious diagnosis. Nephrectomy was done in all the 7 cases in which the patient recovered.

57. Fate of Silver Wire Suture of Fractured Patella.—Twelve men between the ages of 22 and 49 whose fractured patellas had been sutured with silver wire were recently reexamined. Objective ideal healing of the fracture was found to have occurred in only 3 of the cases. In the others the wire had become displaced and the parts were not firmly fas-

tened together, but were loose in all but one case. In some the wire had broken up into several pieces; in 4 others it had worked its way into the joint. von Brunn concludes that silver wire is not strong enough to guarantee consolidation of the bone. Silk or catgut would have been fully as effectual as the wire in these cases.

58. **Sarcoma of a Long Bone.**—Kocher found that in 45 cases of sarcoma of a long bone cured by operative measures 30 were myelogenic sarcomata. Out of 32 myelogenic sarcomata operated on there has been no recurrence for more than three years in 5 patients, 2 of whom had been treated by amputation, 2 by resection and 1 by mere evacuation. Conservative measures are advised always for myelogenic sarcoma and sometimes for the periosteal when not too far advanced, with resort to amputation or exarticulation in case of recurrence. Patients must be kept under supervision for three years at least after the operation.

60. **Ultimate Results of Operative Treatment of Umbilical Hernia.**—Krauss found 13 patients permanently cured out of 22 operated on by the Bruns-Condamin technic during the last twelve years. Recurrence was observed in 9 cases. The details of the technic and the case histories are given in full.

61. **Splenectomy for Traumatic Rupture of Spleen.**—In 11 out of the 103 cases of traumatic rupture of the spleen, reports of which have been published, the injury had been inflicted by the kick of a horse. Hörz reviews this material and describes a case, personally observed, treated by splenectomy. Systematic examination of the blood showed that the removal of the spleen had absolutely no ill effects. In conclusion, he reviews the 34 splenectomies done since 1902 for traumatic rupture of the spleen, bringing Berger's statistics down to date.

66. **Roentgen Treatment of Malignant Lymphoma.**—Pfeiffer concludes from his experience with one patient and from analysis of the literature that it is impossible to exclude positively all injurious by-effects of the exposures. No permanent cures have yet been realized; recurrence has been observed in 70 per cent. of the patients treated. Recurrence may be as late as after the fourteenth month and it is generally soon fatal. Transient improvement may be secured, but is not constantly observed.

69. **Incarcerated Hernia of the Diaphragm.**—Vayhinger advocates the transpleural method of operative treatment as far superior to the abdominal for various reasons, among them the lesser mortality, the better oversight and better and easier reduction of the hernia, while the hernial opening can be sutured more readily.

All the articles in this opening number of the fiftieth volume of the *Beiträge* issue from von Bruns' clinic at Tübingen.

Berliner klinische Wochenschrift.

71 (XLIII, No. 49, Pp. 1555-1582.) Tumors in Dogs Transmitted by Sexual Contact. A. Sticker. (Uebertragung von Tumoren bei Hunden durch den Geschlechtsakt.)
72 *Decapsulation of Kidney in Treatment of Severe Eclampsia. A. Sippel. (Ein neuer Vorschlag zur Bekämpfung schwerster Eklampsieformen.)
73 *Origin of Acute Hemorrhage and Necrosis of Pancreas. E. A. Polya. (Zur Pathogenese der ac. Pankreasblutung und Pankreasnekrose.)
74 *Pathogenesis and Treatment of Infantile Splenic Anemia. H. Wolff. (Anaemia splenica infantum.)
75 Results to Date of Experimental Vaccination Against Syphilis. C. Bruhns. (Resultate der exp. Syphilisimpfung.)

72. **Decapsulation of Kidney in Eclampsia.**—Sippel noticed in 1902 that the kidneys were in a condition of glaucoma in the body of a woman who had succumbed to eclampsia with persisting anuria two days after delivery. This finding, with other experiences, impels him to advocate slitting the capsule of each kidney when these organs do not functionate efficiently after delivery in cases of eclampsia. He has never had opportunity to carry out this idea in practice, but Edebohls' success in this line, he says, justifies the measure as the routine treatment for such conditions. He does not advocate it before delivery, but would restrict it to the severer forms of eclampsia after childbirth.

73. **Pathogenesis of Hemorrhage and Necrosis in Pancreas.**—Polya's experimental research demonstrates that the presence of even a small amount of duodenum content in the pancreatic duct causes a severe affection in dogs which, in its course and pathologic anatomic findings, corresponds exactly to fat tissue necrosis in man. Trypsin in the duct has a similar effect.

74. **Splenic Infantile Anemia.**—Wolff describes a very severe case in a child, 1 year old, with only 467,000 reds and 37,800 whites, hemoglobin 40 per cent. The spleen was much enlarged and the anemia and cachexia were extreme. The spleen was removed without loss of blood, under chloroform, the entire operation lasting 40 minutes. The child weighed 14 pounds and the spleen weighed about 1 pound and measured 19x11x3 cm. The blood picture altered at once for the better; in 10 days the reds had increased more than tenfold and the child had gained 2 pounds in weight and continued to improve. Wolff ascribes the affection to some primary disturbance in the spleen.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

76 (XXXII, No. 50, Pp. 2017-2056.) Treatment of Bullet Wounds. Sprengel. (Schussverletzungen.) Clinical lecture.
77 *Treatment of Ulcer in Stomach or Duodenum After Perforation into Abdominal Cavity. v. Eiselsberg. (Behandlung des in die freie Bauchhöhle perf. Magen- und Duodenalulcus.)
78 *Operative Treatment of Tuberculous Process in Upper Cervical Vertebra. E. Payr. (Op. Behandlung des Malum suboccipitale.)
79 Intestinal Stenosis as Tardy Effect of Appendicitis. A. v. Bergmann. (Darmstenosen als Spätwirkung der App.)
80 *Catgut Suture of Fractured Patella. Riedel. (Die Catgutnaht bei Fract. patellae.)
81 *New Method of Uniting and Suturing the Ends of the Ureter After It has been Completely Divided. S. Pozzi. (Invagination mit Entropium.)

77. **Treatment of Perforated Gastric or Duodenal Ulcer.**—Five recovered out of the 12 patients on whom von Eiselsberg has operated for perforation of an ulcer into the free abdominal cavity. Some of the others were practically moribund when first seen. He endorses Brunner's statement that the physician who sends a patient with such a perforation promptly to the hospital, without wasting time on internal measures, deserves more credit than the surgeon for the success of the operation. He extols the great benefit of jejunostomy, after the perforation has been taken care of; it allows the stomach to be left in peace while the patient can be sufficiently nourished from the start. The Witzel technic is simple and rapid and the patient can be fed every two hours to his great advantage. In one instance nourishment was pushed too far and the patient acquired a transient catarrhal intestinal affection; he had then been tided past the critical period. Thorough rinsing of the peritoneum in peritonitis is the rule at von Eiselsberg's clinic, supplemented by salt solution subcutaneously and intravenously at need. He tampons in case of diffuse peritonitis, preferably in the form of Gersuny's wicks, bringing the wick or drain out through the upper or lower angle of the wound which is otherwise sutured. He does not use lamp wicking, as it breaks too readily, preferring a knitting yarn for the purpose, known as Gumpoldskirchner-Strickgarn No. 16. His impression is that an extensive radical operation or gastroenterostomy does not ensure against recurrence of the ulcer and consequently he advises the jejunostomy alone as offering the best chances for permanent success under the conditions. The remote results in his experience justify these conclusions.

78. **Operative Cure of Tuberculous Process Just Below the Atlanto-Occipital Articulation.**—Contrary to the general opinion that a tuberculous process in this region is best treated by extension and evacuation of pus when it has settled to the lowest point, Payr thinks that aggressive operative treatment is justified under certain conditions. He reports the details of a primary tuberculous affection of the bone of the cervical vertebræ which he treated by excision of the focus. It was unilateral and by its location and extent allowed radical removal without fistula formation and with complete recovery of the patient, a woman of 35. The play of the muscles is important for the early diagnosis, as in hip-joint disease. If the trouble is bilateral the head is held stiffly erect, but when it is restricted to one side the head is bent or the chin twisted over to that side to relieve the pressure, whether the lesion is in the articulation or just below it. The localization of the pain is also instructive, and the *x*-rays may throw light on the nature and seat of the process. Ample access must be secured

by horizontal incision from the mastoid process to beyond the median line, with a perpendicular incision, 14 cm. long, extending downward from a point not far from the mastoid process. Such intervention should be restricted to unilateral processes in the early stages with relative retention of free movement of the head and not much painfulness when pressure is applied to the vertex. Such cases are rare, but the favorable results attained in the case reported justify further attempts in this line.

80. **Catgut Suture of Fractured Patella.**—Riedel used catgut in treating 3 old fractures of the patella and 8 recent fractures. Two other patients with splintered fracture of the patella, without much dislocation, did not require suturing, and the fractures healed without operative interference. The result was faultless healing and almost perfect functioning of the joint. The same results were obtained in nearly all the cases sutured with catgut. In 2 cases he used five or six sutures with stouter catgut, and aseptic inflammation resulted, with fever and apparently severe phlegmons. The leg became enormously swollen, but the general condition persisted invariably good; the patients were placid, while the surgeon worried for fear of impending suppuration in the joint. The parts healed in time, but the legs can not be actively flexed more than 110 degrees and the joints are still a little stiff. This aseptic inflammation from the use of too much catgut explains a number of disturbances which he has observed in operations in which much catgut was used. The phlegmon is at first aseptic, but is liable to become infected from the skin. When a small amount of fine catgut is used, this complication does not occur. In future Riedel intends to use only four fine catgut threads; the upper half of the patella, under chloroform, does not offer the least resistance. The patient whose patella was sutured with only two threads has the most functionally perfect joint to date.

81. **Union of Severed Ureter by Invagination and Suture.**—Pozzi describes a case in which the ureter was cut across in the course of a difficult abdominal operation. He united the stumps again by invaginating the upper end in the lower end, turning back inside the upper end of the lower stump. He first stretched the lower stump and then made a longitudinal incision for 2 cm. from the top. The upper margin was then turned back inside for 1 cm., bringing the outer aspect of the ureter into the lumen. The upper stump was then introduced into the lower stump for a distance of 1 cm. The stumps were then sutured together and the ureter straightened out; the longitudinal incision was then sutured, not allowing the stitches to enter the mucosa. This technic of invagination and entropion brings the outer surfaces of both stumps together, ensuring perfect healing without tendency to cicatricial retraction. The parts are more liable to stretch than to develop stenosis. If desired, the circular buttonhole suture can be made over a small sound or hysterometer with crooked end, introduced through the longitudinal incision. Catheterization of the ureter is not required after the operation, he thinks, as the ureter is not inclined to necrosis, but displays a peculiar and quite extraordinary vitality. He drains afterward; urine oozes out of the junction at first, but the ureteral fistula soon closes spontaneously.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed XLVII, page 2127.

82 (LXIV, No. 5, Pp. 651-778.) Utilization of Iron by Infants. N. Krasnogorsky. (Ausnützung des Eisens bei Säuglingen.)
83 *Influence of Salt on Dropsy in Children. O. Grüner. (Einfluss des Kochsalzes auf die Hydropisien des Kindesalters.)
84 *Endemic Influenza in Children. L. Jehle. (Grippenendemie hervorgerufen durch den *Micrococcus catarrhalis*.)
85 Changes in Neutrophile Blood Picture During Incubation of Measles. H. Flesch and A. Schossberger. (Veränderung des neutr. Blutbildes im Inkubationsstadium von Masern.)
86 Six Cases of Gangrenous Processes During Measles. B. von Holwede. (Brand bei Masern.)
87 Syphilitic Myocarditis with Acute Development of Drumstick Fingers. W. Stoeltzner. (Myoc. syph. mit akuter Entwicklung von Trommelschlägelfingern.)
88 Two Atypical Cases of Myxedema. F. Siegert and B. Karrer. (2 atyp. Myxodemfalle.)

83. **Influence of Salt on Dropsy in Children.**—The daily findings in 8 cases of dropsy in children are tabulated, with the amount of salt and of fluids ingested and eliminated, the specific gravity of the urine and other details of the metabolism. They show the remarkable parallelism between retention of salt and formation of edema, and the prompt subsidence of the latter under the influence of partial or complete deprivation of salt. The fact of the retention of salt and its consequences has been fully established, he states, but it is difficult to explain its mechanism. Grüner accepts the whole process as a spontaneous means of regulating the osmotic balance. Both experience and theory, he declares, sustain the advantages of restricting the intake of salt in all cases of edema of cardiac or renal origin or tendency thereto. Restriction of the intake of salt is not always effectual in every case of existing retention of salt. Possibly the retained salt in these cases is combined with the albuminoids and tissue fluids in some way and is no longer in the form of a simple solution, and thus its elimination through the kidneys is prevented.

84. **Endemic Influenza Among Children.**—Jehle describes an endemic induced by the *Micrococcus catarrhalis* in the infants' ward in a hospital. The infants in the incubators were not affected, but the other children had several recurrences of the epidemic febrile affection. High fever was the only marked symptom and no complications were observed, not even coryza, except in a few instances. Five drops of pyocyanase were instilled into each nostril, and infants thus treated were spared further recurrence, while the bacteriologic findings were constantly negative thereafter.

Monatsschrift f. Geb. und Gynäkologie, Berlin.

Last indexed XLVII, page 2128.

89 (XXIV, No. 5, Pp. 575-702.) Obstetrics at the Tyrol Maternity, 1890-1906. E. Ehrendorfer. (Rückblick auf einzelne klinische Fortschritte in der Tiroler Landesgebärklinik innerhalb der letzten ca. 1½ Dezennien.)
90 *Retention of Fetal Membranes. P. Rissmann. (Eihautretention.)
91 *Value of Potassium Iodid in Eclampsia. O. Gutbrod. ("Zur Eklampsiefrage.")
92 Influence of Intravenous Injection of Own Placenta Substance in the Rabbit. E. Martin. (Einfluss einer intrav. Inj. von Placentar-Substanz auf den eigenen Organismus beim Kaninchen.)
93 *Intestinal Occlusion in Case of Parametritis. P. Kuliga. (Erscheinungen von Darmverschluss bei Parametritis.)
94 Case of Marginal Insertion of Umbilical Cord on Placenta Prævia with Blood Vessels on the Side of the Membranes Next to the Internal Os, with Birth of Living Child After Rupture of Two of the Vessels. B. Zöppritz. (Vasa praevia bei Insertio velamentosa, etc.)
95 *Collective Review of Latest Works on Appendicitis During Pregnancy and Childbed. R. Klien. (App. während der Schwangerschaft, Geburt und Wochenbett.)
96 Duties of Midwife After Delivery. R. Lumpe. (Wie sollen sich die Hebammen in der Nachgeburtszeit verhalten?)

90. **Retention of Fetal Membranes.**—Rissmann is convinced that retained membranes must be removed to prevent impending sepsis, to ensure prompter recovery and complete involution of the genitalia and as a means of arresting hemorrhage. He has found that energetic pressure from without, repeated at long intervals, is generally sufficient to ensure the expelling of the membranes, although his experience indicates that the more the uterus is left untouched for a time after delivery the greater the tendency to spontaneous expulsion of the membranes. If they are still retained after an interval of 24 hours, instrumental removal is indicated. He summarizes 16 case histories to show the advantages of acting on these principles. In some cases the membranes were so tough and so adherent that spontaneous expulsion would have been out of the question. In other cases the conditions indicated that the lower segment of the uterus had contracted in such a way as to prevent any chance of spontaneous expulsion.

91. **Potassium Iodid in Prophylaxis of Eclampsia.**—Gutbrod's patient was a iv-para, with a history of eclampsia at every childbirth except the third. The absence of eclampsia at the third delivery is ascribed by Gutbrod to his prophylactic administration of potassium iodid. The course of the pregnancy and delivery was normal under the influence of this drug administered according to Lomer's technic, with rest in bed at the periods at which menstruation would have occurred in the absence of pregnancy. As the course of the childbirth was so smooth, the family assumed that the fourth pregnancy would have an equally favorable natural outcome and omitted the potassium iodid and rest. Severe eclampsia developed at the seventh month, requiring artificial delivery, and amaurosis persisted for several days. The case is reported as unusually convincing testimony to the value of potassium iodid in the prophylaxis of eclampsia. The drug permeates the tissues of both mother

and fetus and acts on the toxin causing the eclampsia, while it stimulates the secretion of urine and strengthens the heart. Gutbrod makes a practice of giving potassium iodid in every case of abortion to promote absorption of any infarcts that may form in the uterus. He also gives it when the fetus had been delivered putrefied in previous pregnancies or the afterbirth had been unduly retained. His experience now includes 120 patients for whom he has ordered potassium iodid regularly from the beginning of pregnancy. The ordinary dose never caused any disturbances in mother or child. The results have been so universally good that he is tempted to give it systematically in all pregnancies, not merely in the pathologic, as a means of aiding the maternal organism during the stress of childbearing, at least during the last two months, and of averting any possible tendency to eclampsia. He mentions as another argument Caspari's favorable experience with potassium iodid in chronic and acute nephritis.

93. **Intestinal Occlusion from Parametritis.**—Kuliga reports 3 cases of inflammatory processes in tissues adjoining the uterus, with effusions which compressed the rectum. The occlusion was not complete at first, but became so as the signs indicated that the intestines were paralyzed. One of the patients succumbed to the resulting ileus; the second patient recovered, but was left with an artificial anus for six months, and the third patient was four months in bed and still carries an artificial anus. The cases teach the necessity for extreme caution in applying weighting and superheating in treatment of parametritis. The acute exacerbation in one case was undoubtedly due to measures of this kind, and he has frequently had occasion to observe acute exacerbations after application of these measures to patients who had been free from fever for weeks. The cases further teach the necessity for caution in the use of the high intestinal tube. The long obstipation renders the walls of the intestine so friable that perforation is always menacing. When signs of complete paralysis of the intestines are observed, ordinary injections and purgatives internally do no good, and an artificial anus should be made at once, as a rule. This is a comparatively harmless intervention, relieves the patient at once and removes the pressure of the fecal masses on the effusion which may be the means of keeping up the inflammation and postponing healing. The general condition rapidly improved in the cases in which Kuliga made an opening into the intestine. Whether to evacuate the effusion through the vagina or not depends on the individual case. Pus is better removed, but under other conditions it is perhaps best to wait after making the new anus to see if the inflammatory process does not subside spontaneously. Severe hemorrhage might follow operative intervention and be difficult to control in the pathologically altered tissues. He knows of only 5 cases on record in which the rectum was closed by compression from a parametritic effusion. One of the patients succumbed to peritonitis, and 3 were cured by inguinal colotomy after suppuration.

95. **Appendicitis During Pregnancy.**—Klein has collected 34 cases of appendicitis occurring during pregnancy or the puerperium. Operative treatment was undertaken in 17. All the patients recovered except 2 for whom the intervention came altogether too late, and a third patient who was treated by vaginal hysterectomy on a mistaken diagnosis. Four died of the 17 who received expectant treatment. Childbirth occurring during the appendicitis is a grave matter. Only 3 survived out of the 7 patients in this category.

Münchener medizinische Wochenschrift.

97 (LIII, No. 49, Pp. 2377-2424.) Further Researches on Cow's Milk Precipitin in Infants' Blood. E. Moro. (Kuhmilchpräzipitin im Säuglinsblut.)
98 *Functional Hypertrophy of Transplanted Scraps of Thyroid Tissue in Man. H. Cristiani and E. Kummer. (Funkt. Hypertrophie überpflantzer Schilddrüsenstückchen.)
99 *Eosinophile Intestinal Affections. O. Neubauer and C. Stäubli. (Eosinophile Darmerkrankungen.)
100 *Bacteriologic Early Diagnosis of Typhoid. H. Conradi. (Bakt. Frühdiag. des Typh.)
101 Influence of Arsenic on Metabolism. A. Lardelli. (Einfluss des Arsens—Val Sinestrawasser—auf den Stoffwechsel.)
102 What Do We Know of the Active Agent in Vaccine? E. Paschen. (Was wissen wir über den Vakzineerreger?)
103 Presence of Antituberculin in Tuberculous Tissue. A. Wassermann and C. Bruck. (Vorhandensein von Antituberkulin im tub. Gewebe.)
104 *Treatment of External Anthrax. K. Lengfellner. (Behandlung bei äusserem Milzbrand.)
105 *Tamponing in Treatment of Ozena. R. Sondermann. (Nasentamponade bei Ozena.)
106 *Speculum Holder. Schallehn. (Halteplatte für Spekula.)

98. **Functional Hypertrophy of Transplanted Pieces of Thyroid Gland.**—Cristiani's experiences in the clinic with transplanted scraps of thyroid glands have been duly chronicled in THE JOURNAL as reported. He here relates a case of partial exophthalmic goiter treated by resection of the thyroid gland followed by transplantation of two scraps from the thyroid gland. They were implanted under the skin over the right acromion. The scraps were histologically normal, and in course of time developed just as if they had remained in their normal place, showing functional hypertrophy when excised three years afterward. He thinks that there is no doubt but that the implanted scraps participated in the total thyroid functioning. Another patient had been operated on at the same time for approximately the same indications, but no attempt was made at transplantation of any of the extirpated gland tissue and the patient succumbed to cachexia thyreopriva. More of the thyroid gland had been left *in situ* in this than in the first case. In conclusion, Cristiani affirms anew that experience is confirming his assertions in regard to the possibility of producing new thyroid organs which not only retain their vitality and functionate, but which grow in time to be actual new thyroid glands of respectable size.

99. **Eosinophile Intestinal Affections.**—Neubauer and Stäubli report 6 cases of severe diarrhea or catarrhal affections of the intestines characterized by yellowish deposits on the reddened rectal mucosa, leaving bleeding erosions as the deposits are brushed off by the passage of stools. The deposits consist of eosinophile leucocytes, débris and Charcot-Leyden crystals. The local eosinophilia is accompanied by increased proportions of eosinophiles in the blood, similar to that observed in other local eosinophile affections, such as asthma and pemphigus. The intestinal affection may appear abruptly and may exhibit severe exacerbations lasting for weeks or months, with a mild chronic tendency in the intervals. A nervous predisposition is evident, as in asthma and membranous enteritis. A tendency to eruptions was also pronounced in 2 of the patients, such as is sometimes observed with the asthmatic tendency. These facts suggest that eosinophile proctitis with focal deposits is the local expression of some general constitutional anomaly.

100. **Early Bacteriologic Diagnosis of Typhoid.**—Conradi announces that an early diagnosis of typhoid fever can be made from the smallest amount of blood available for the agglutination test. The serum can be utilized for the agglutination test. It will be found sterile, as the typhoid bacilli present are caught in the fibrin in the rest of the blood. Experiments with blood from 60 typhoid patients showed the presence of the bacilli in the coagulum from amounts of blood ranging between 0.05 and 0.2 c.c. The little thread of coagulum is extracted from the capillary tube with forceps and transferred to a test tube containing 5 c.c. of beef bile, with 10 per cent. peptone and 10 per cent. glycerin. The tube is then kept at a temperature of 37 C. for from 12 to 16 hours. It is then well shaken, and 0.1 and 1 c.c. of the contents are spread out with a glass spatula on dried plates of litmus-milk sugar agar. In 24 of the 60 cases typhoid cultures developed on the plates, that is, in 40 per cent. Restricting the figures to the patients in the first or second week of the disease, the proportion was 50 per cent. By this simple means it proved possible to make a positive diagnosis even with the minimal amounts of blood sent in for the agglutination test. He adds that the "bile cultures" offer a prospect of being able to detect typhoid fever in its earliest stages.

104. **Treatment of Anthrax.**—Lengfellner reports the complete cure of 15 patients with anthrax treated merely with a simple salve and dressing to protect the lesion, and suspension and fixation to ensure absolute rest for the part, without further measures.

105. **Tamponing the Nose in Treatment of Ozena.**—Sondermann recommends the following method of removing the crusts in ozena as easy for the patient while a great aid in the cure. A rubber condom is introduced collapsed into the nose. It is then inflated by a connecting tube and bulb, when it fits

close against the walls of the nose, adapting itself to all nooks and crevices. After from 5 to 10 minutes the stopcock is turned and the air allowed to escape from the condom, after which it is easily removed and transferred to a vessel containing water. Many of the crusts stick to it and are thus removed with it, while those remaining in the nose are loosened and can then be readily expelled spontaneously. During the first week the patient repeats this twice a day and later once a day. This procedure is supplemented by aspiration of the secretions according to Sondermann's technic recently described in these columns on page 87.

106. **Supporting Plate for Speculum.**—Schallehn's plate fits under the patient's pelvis and lower part of the back and carries the speculum fastened to the plate by a standard. The whole moves with every movement of the pelvis and thus obviates the danger of injury liable with instruments fastened to an immovable table.

Zeitschrift f. Geb. u. Gynäkologie, Stuttgart.

Last indexed XLVII, page 1774.

107 (LVIII, No. 3, Pp. 363-531.) *Epithelioma of the Duct of Gland of Bartholin. A. Sitzenfrey. (Hornkrebs des Gangsystems der B. schen Drüse.)

108 *Cancer of Fallopian Tube. E. G. Orthmann. (Maligne Tubenneubildungen.)

109 *Relationship Between Saprophytic and Pathogenic Puerperal Streptococci, and Study of Streptococcus Immunity. W. Zangemeister and T. Meissl. (Verwandtschaft sapr. und path. Puerp.-Strept., und über die Strept.-Immunität.)

110 *Infection of Umbilicus in Infantile Mortality. C. Keller. (Nabelinfektion in der Säuglingssterblichkeit, 1904-5, Berlin.)

111 Uterine Myoma. Henkel. (Zur Klinik und zur Chirurgie des Uterusmyoms.)

107. **Epithelioma of Gland of Bartholin.**—Sitzenfrey's patient was an unmarried woman of 29 who had been infected with gonorrhea seven years before. The gonorrhea had assumed a chronic form with several acute exacerbations. The epithelioma recurred six months after removal of the primary growth, but the patient has been cured to date since removal of the recurrence. She returned a year after the last operation on account of prolapse of the vagina from the defect left after the resections. He discusses the technic of repair.

108. **Primary Cancer of the Tubes.**—Orthmann adds 2 new cases to the 84 that have been recorded since he published the first in 1886. He also describes 3 other cases of malignant disease of the tubes secondary to carcinoma or sarcoma of the ovaries. Malignant disease of the tubes secondary to primary carcinoma of the uterus seems to be extremely rare, while it is common as a sequence of malignant affections of the ovaries. In one of Orthmann's patients the primary carcinoma of the left tube accompanied a tubo-ovarian cyst, probably the primary lesion. The patient survived a year before she succumbed to a recurrence which was found inoperable at the ninth month. In 9 of the cases on record this connection between a tubo-ovarian cyst and malignant disease of the tubes was apparent. In the second patient primary malignant disease was encountered in both tubes. In one it had developed secondary to a cystic affection of the tube, and in the other it was still in an incipient stage. The tubes and ovaries were removed and the patient is still in good health, seven months later.

109. **Transformation of Streptococci and Immunization During the Puerperium.**—The extensive researches reported by Zangemeister and Meissl demonstrate, they think, that ordinary saprophytic streptococci are liable to assume pathogenic properties under conditions such as those of the puerperium, and that all the facultative anaërobic streptococci belong to a single species. Two important consequences follow from this assumption, namely, the possibility of infection from streptococci which have hitherto led a saprophytic existence, and the possibility of successful immunization of the patient against all strains of streptococci. With the aid of two polyvalent antistreptococcus sera they were able to protect mice against a large number of extraneous strains of streptococci of various origins.

110. **Umbilical Infection as a Factor in Infantile Mortality.**—Keller finds on examining the vital statistics of Berlin during 1904-5 that 2 per cent. of the total mortality is due to umbilical infection during the first month of life, entailing sepsis, tetanus, local infection or hemorrhage or peritonitis. The proportion of the first year of life is 1 per cent. and the annual average is 1.3 per cent. The percentage of deaths from tetanus and from sepsis is extraordinarily high during the first month of life, showing the influence of umbilical infection. He treats the umbilicus by applying a piece of mull kept until needed in alcohol. The alcohol is squeezed out just before using, to prevent eczema of the genitals, but enough is left to exert a drying and disinfecting action on the part. After the alcohol has evaporated a simple aseptic dressing is left which answers every purpose if asepsis has been the rule otherwise in respect to the hands, instruments, etc. The alcohol dressing is renewed every two hours. He makes a practice of taking the rectal temperature twice a day of all the new-born infants, and is thus able to detect umbilical infection in its incipiency.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

INTERNATIONAL CLINICS, A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, and others. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D. Vol. IV. Sixteenth series, 1906. Cloth. Pp. 322. Price, $2.00. Philadelphia: J. B. Lippincott Company, 1906.

A TREATISE ON ORTHOPEDIC SURGERY. By R. Whitman, M.D., Clinical Lecturer and Instructor in Orthopedic Surgery in the College of Physicians and Surgeons of Columbia University, New York. Third edition, revised and enlarged. Illustrated with 554 Engravings. Cloth. Pp. 871. Price, $5.50 net. Philadelphia: Lea Brothers & Co., 1907.

CONSERVATIVE GYNECOLOGY AND ELECTRO-THERAPEUTICS. A Practical Treatise on the Diseases of Women and Their Treatment by Electricity. By G. B. Massey, M.D., Attending Surgeon to the American Oncologic Hospital, Philadelphia. Fifth revised edition. Cloth. Pp. 467. Price, $4.00 net. Philadelphia: F. A. Davis Company, 1906.

TROPICAL MEDICINE, with Special Reference to the West Indies, Central America, Hawaii and the Philippines, Including a General Consideration of Tropical Hygiene. By T. W. Jackson, M.D., Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia. Cloth. Pp. 536. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co., 1907.

A TEXT-BOOK OF DISEASES OF WOMEN. By J. C. Webster, B.A., M.D., F.R.C.P.E., F.R.S.E., Professor of Obstetrics and Gynecology in Rush Medical College, in affiliation with the University of Chicago. With 312 Illustrations and 10 Colored Plates. Cloth. Pp. 712. Price, $7.00. Philadelphia: W. B. Saunders Company, 1907.

PRACTICE OF OBSTETRICS, Designed for the Use of Students and Practitioners of Medicine. By J. C. Edgar, Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College. Third edition, revised. Cloth. Pp. 1071. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

REFRACTION OF THE EYE, Its Diagnosis and the Correction of Its Errors, with a Chapter on the Use of Prisms. By A. S. Morton, M.B., F.R.C.S., Surgeon to the Moorfields Ophthalmic Hospital. Seventh edition. Cloth. Pp. 96. Price, $1.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

JAHRESBERICHT, Ueber die Fortschritte in der Lehre von den Pathogenen Mikroörganismen umfassend Bacterien, Pilze und Protozoen. By P. von Baumgarten and F. Tangl. Zwanzigster Jahrgang, 1904. Paper. Pp. 1106. Leipsic: Verlag von S. Hirzel, 1906.

BEITRÄGE ZUR ERKENNTNISS DES URANISMUS, Heft I. Die Uranische Familie, Untersuchungen ueber die Ascendenz der Uranier. By L. S. A. M. von Römer. Paper. Pp. 107. Leipsic: Verlag von Maas & Van Suchtelen, 1906.

THE HARVEY LECTURES, Delivered Under the Auspices of the Harvey Society of New York, 1905-06. By Prof. H. Meyer, Prof. C. von Noorden and others. Cloth. Pp. 337. Philadelphia: J. B. Lippincott Company, 1906.

PHYSICAL CHEMISTRY in the Service of Medicine. Seven addresses. By W. Pauli. Authorized translation by M. H. Fischer. First edition. Cloth. Pp. 156. Price, $1.25 net. New York: John Wiley & Sons, 1907.

TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION at Its Twenty-ninth Annual Meeting, held in New York, Dec. 28-30, 1905. Paper. Pp. 239. Official report of the proceedings. By C. J. White, M.D., Secretary.

TUMORS OF THE CEREBRUM, Their Focal Diagnosis and Surgical Treatment. By C. K. Mills, M.D., C. H. Frazier, M.D., and others. Cloth. Pp. 35. Philadelphia: E. Pennock, 1906.

BIENNIAL REPORT OF THE DEPARTMENT OF HEALTH OF THE CITY OF CHICAGO for the Years 1904-1905. By C. J. Whalen, M.D., Commissioner of Health. Paper. Pp. 308.

THE MYSTERY. By Stewart Edward White and Samuel Hopkins Adams. With 16 Illustrations. Cloth. Pp. 286. New York: McClure, Philips & Co., 1906.

STUDIES FROM THE BENDER HYGIENIC LABORATORY, Albany, N. Y. Reprints. Vol. III, 1906. Paper. Pp. 188. Albany, N. Y.: Fort Orange Press.